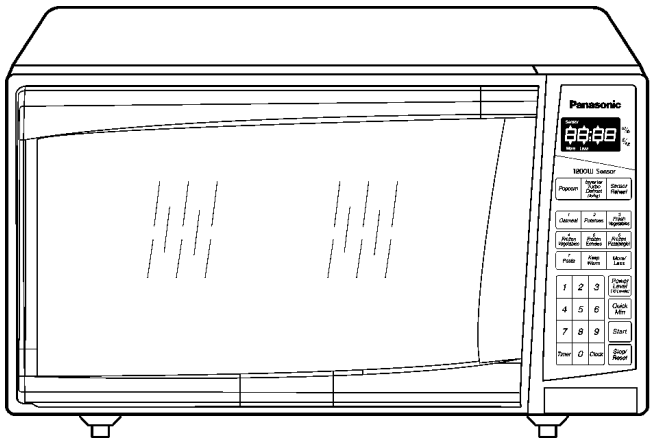
ORDER NO.SIMMC 0401001A1
E1

Service Manual

Microwave Oven

Simplified



NN-T694SF NN-T664SF
NN-T654SF NN-T644SF
NN-H674WF
NN-H664 NN-S654
NN-H644 NN-S644
NN-H634 NN-S634
NN-H624 NN-S624
NN-H614 NN-S614
NN-H604 NN-S604
NN-H504 NN-S504

APH(USA)

CPH(CANADA)

Please file and use this specified manual together with the service manual for Model NN-S560BF/WF(ORDER NO. SIMMC0001002C3).

Specifications:

	Specifications for APH:							
Specifications: / Model:	T694SF / T664SF T654SF / T644SF	H664MF/BF/WF S654BF/WF	H644BF/WF S644BF/WF H634BF/WF	S634BF/WF	H624BF/WF S624BF/WF	H614BF/WF S614BF/WF	H604BF/WF S604BF/WF	H504BF/WF S504BF/WF
Power Source:	120V AC Single Phase, 60Hz							
Power Requirement:	1460W	1460W	1460W	1460W	1460W	1460W	1460W	1460W
Output(IEC705-88):	1300W	1300W	1300W	1250W	1250W	1250W	1200W	1200W
	Specifications for CPH:							
Specifications: / Model:	T694SF	H674WF	H664MF/BF/WF	S634WF	S624WF	S614WF	S604WF	S504MF/WF
Power Source:	120V AC Single Phase, 60Hz							
Power Requirement:	1460W	1460W	1460W	1460W	1460W	1460W	1460W	1460W
Output(IEC705-88):	1200W	1200W	1200W	1200W	1200W	1200W	1200W	1100W
Microwave Frequency:	*2450MHz							
Timer:	*99 min. 99 sec.							
Outside Dimensions:	*20"(518mm)(D) x 16"(407mm)(W) x 11"(301mm)(H)							
Oven Cavity Dimensions:	*14 "(375mm)(D) x 15"(386mm)(W) x 8 "(225mm)(H)							
Weight:	12.0 kg							
PbF	This product with PbF							
Output power: IEC705-88 Test Procedure								
Specifications subject to change without notice.								

Panasonic®

© 2004 Shanghai Matsushita Microwave Oven Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
  (1) Interlock operation
  (2) Proper door closing
  (3) Seal and sealing surfaces (arcing, wear, and other damage)
  (4) Damage to or loosening of hinges and latches.
  (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40˚C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10˚C.
- Pb free solder will tend to splash when heated too high (about 600˚C).

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. **NEW H.V.**

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink that is energized with very high voltage and high heat energy.**
3. **Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.**

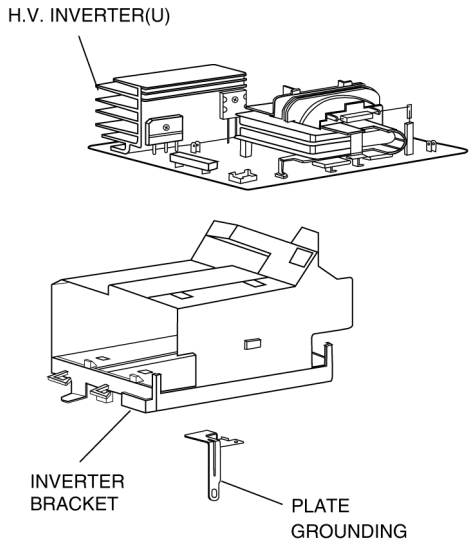
* 2. **Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.**

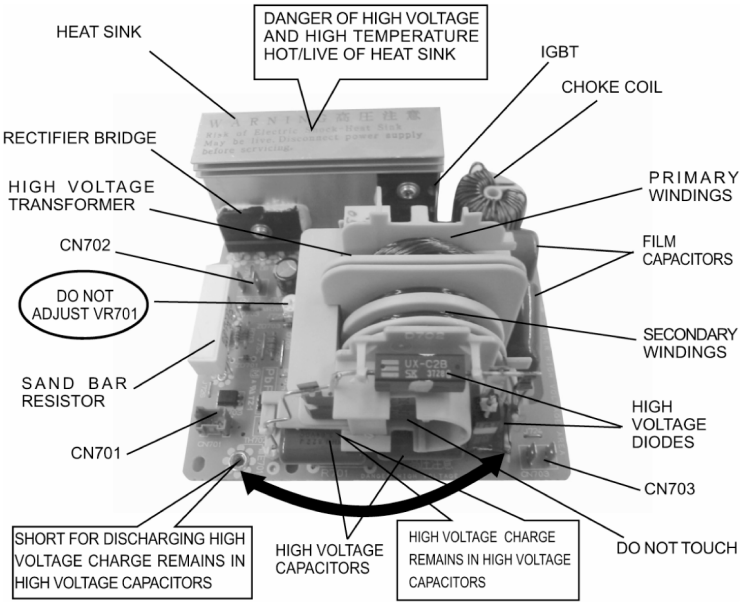
* 3. **Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

* 5. **For USA only:**
   Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit and return fully re-packed in original shipping box and shipping materials.

INVERTER POWER SUPPLY





CONTENTS

Page

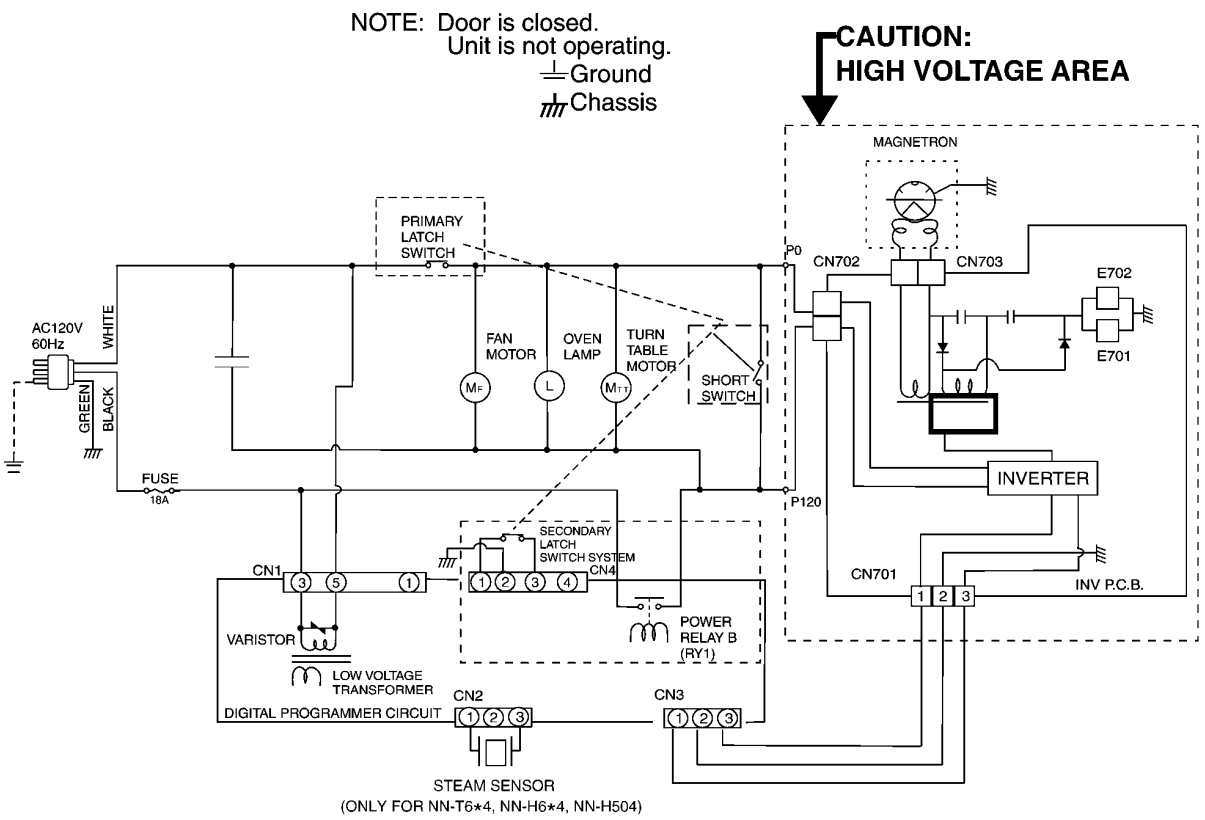
1 SCHEMATIC DIAGRAM 5
1.1. APH 5
1.2. CPH 6
2 MEASUREMENTS AND ADJUSTMENTS 7
2.1. Adjustment of primary latch switch, secondary latch switch and short switch. 7
2.2. Measurement of microwave output 7
3 PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE 8
3.1. Equipment 8
3.2. Procedure for measuring radiation leakage 8
3.3. Record keeping and notification after measurement 8
3.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer. 8
4 EXPLODED VIEW AND PARTS LIST 9

Page

4.1. EXPLODED VIEW 9
4.2. PARTS LIST 10
4.3. DOOR ASSEMBLY 12
4.4. ESCUTCHEON BASE ASSEMBLY 13
4.5. WIRING MATERIALS 15
4.6. PACKING AND ACCESSORIES 16
5 DIGITAL PROGRAMMER CIRCUIT 18
5.1. NN-T694SF APH/CPH 18
5.2. NN-T664SF APH, T654SF APH, T644SF APH 20
5.3. NN-H664 APH/CPH, H674 CPH, S654 APH, H644 APH, S644 APH, H634 APH, S634 APH/CPH, S614 CPH, S604 CPH 22
5.4. NN-H624 APH, S624 APH/CPH, H614 APH, S614 APH, H604 APH, S604 APH, H504 APH, S504 APH/CPH 24
5.5. PARTS LIST 26

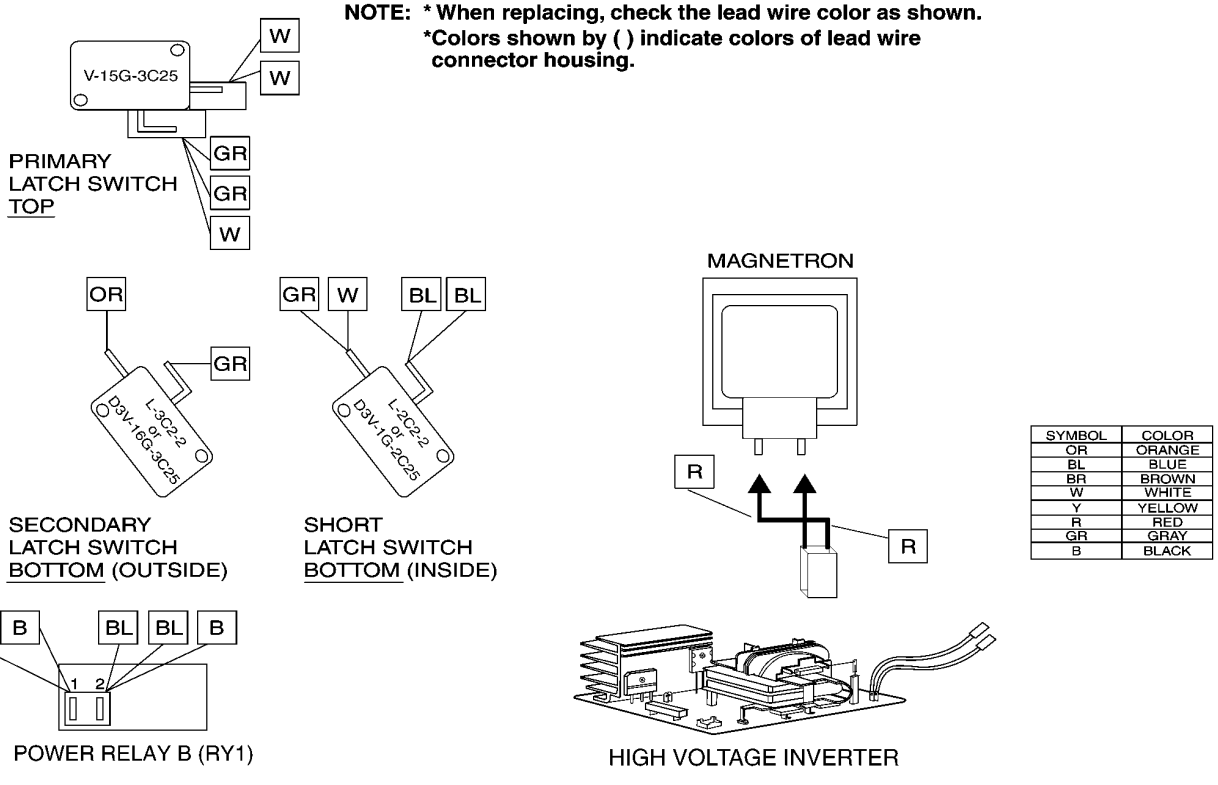
1 SCHEMATIC DIAGRAM

1.1. APH



WIRING DIAGRAM

NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**

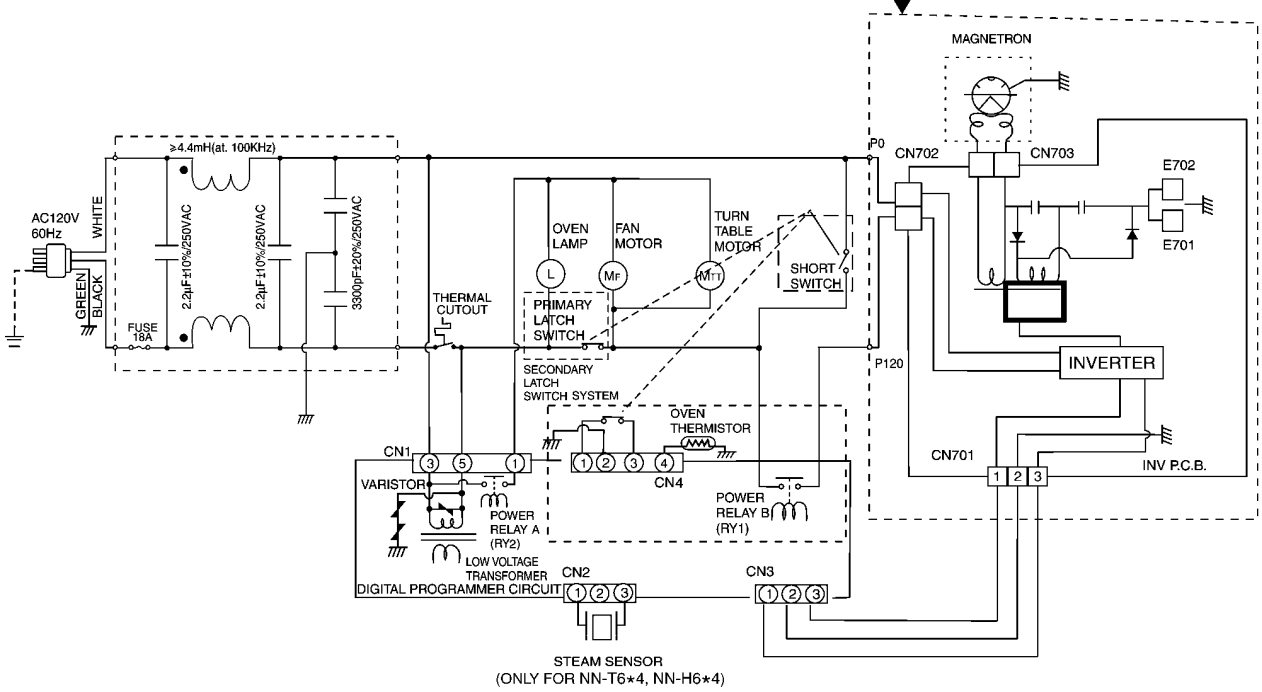


SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

1.2. CPH

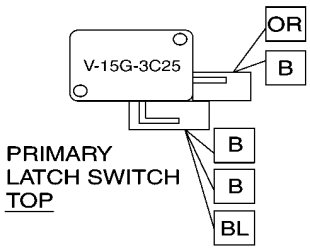
NOTE: Door is closed.
Unit is not operating.
⏚ Ground
⏚ Chassis

CAUTION:
HIGH VOLTAGE AREA

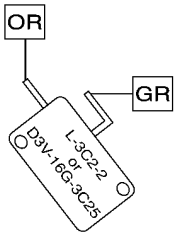


WIRING DIAGRAM

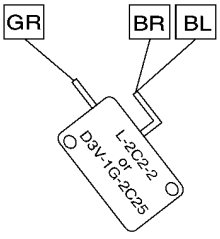
NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**



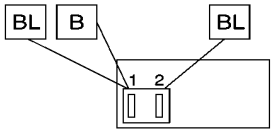
PRIMARY
LATCH SWITCH
TOP



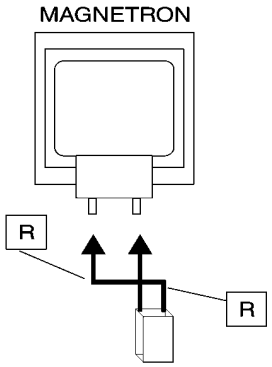
SECONDARY
LATCH SWITCH
BOTTOM (OUTSIDE)

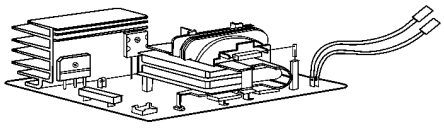


SHORT
LATCH SWITCH
BOTTOM (INSIDE)



POWER RELAY B (RY1)





HIGH VOLTAGE INVERTER

SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

2 MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. J61424T00AP, Type No. V-15G-3C25 for Primary latch switch; Part No. J61414T00AP, Type No. D3V-16G-3C25 for Secondary latch switch and Part No. J61784T00AP, Type No. D3V-1G-2C25 for short switch.)
* When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B (Part No. AEGG5G1A18, Type No. G5G-1A12VDC), Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

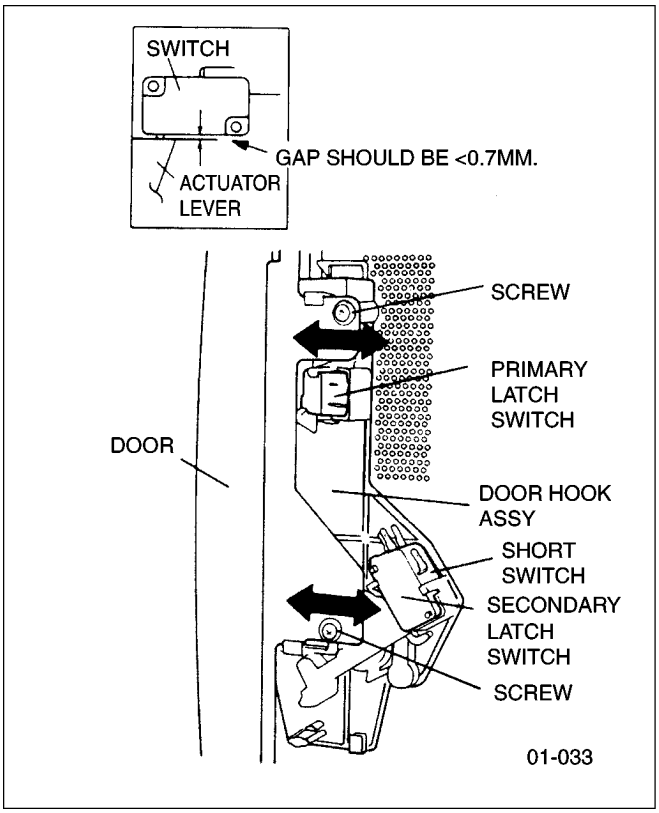
2.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. Mount the Primary latch switch, the Secondary latch switch and the Short switch to the door hook assembly as shown in ILL.

   NOTE:

   No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.

2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.



2.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer
*Wrist watch or stopwatch

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray.
   Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model is as shown in table.

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1100W(IEC705-88)	Min. 16.9°F(9.4°C)
1200W(IEC705-88)	Min. 18.5°F(10.3°C)
1300W(IEC705-88)	Min. 19.8°F(11.1°C)

3 PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm^2 (1mW/cm^2 for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm^2 while in the customer's home. 2mW/cm^2 stated here is our own voluntary standard. (1mW/cm^2 for Canada)

3.1. Equipment

- Electromagnatic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

3.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
- Leakage with the outer panel removed ..... less than 5mW/cm^2.
- Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm^2 (1mW/cm^2 for Canada).
- Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm^2.

1. Pour 275 ± 15cc (9ozs^s± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.
2. Set the radiation monitor to 2450MHz and use it following the manufacturer´s recommended test procedure to assure correct results.
3. When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
4. Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

3.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING

Avoid contacting any high voltage parts.

3.2.2. Measurements with a fully assembled oven.

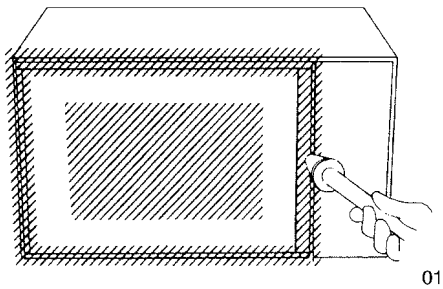
After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3.3. Record keeping and notification after measurement

- After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

  A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- Should the radiation leakage be more than 2 mW/cm^2 (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

3.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

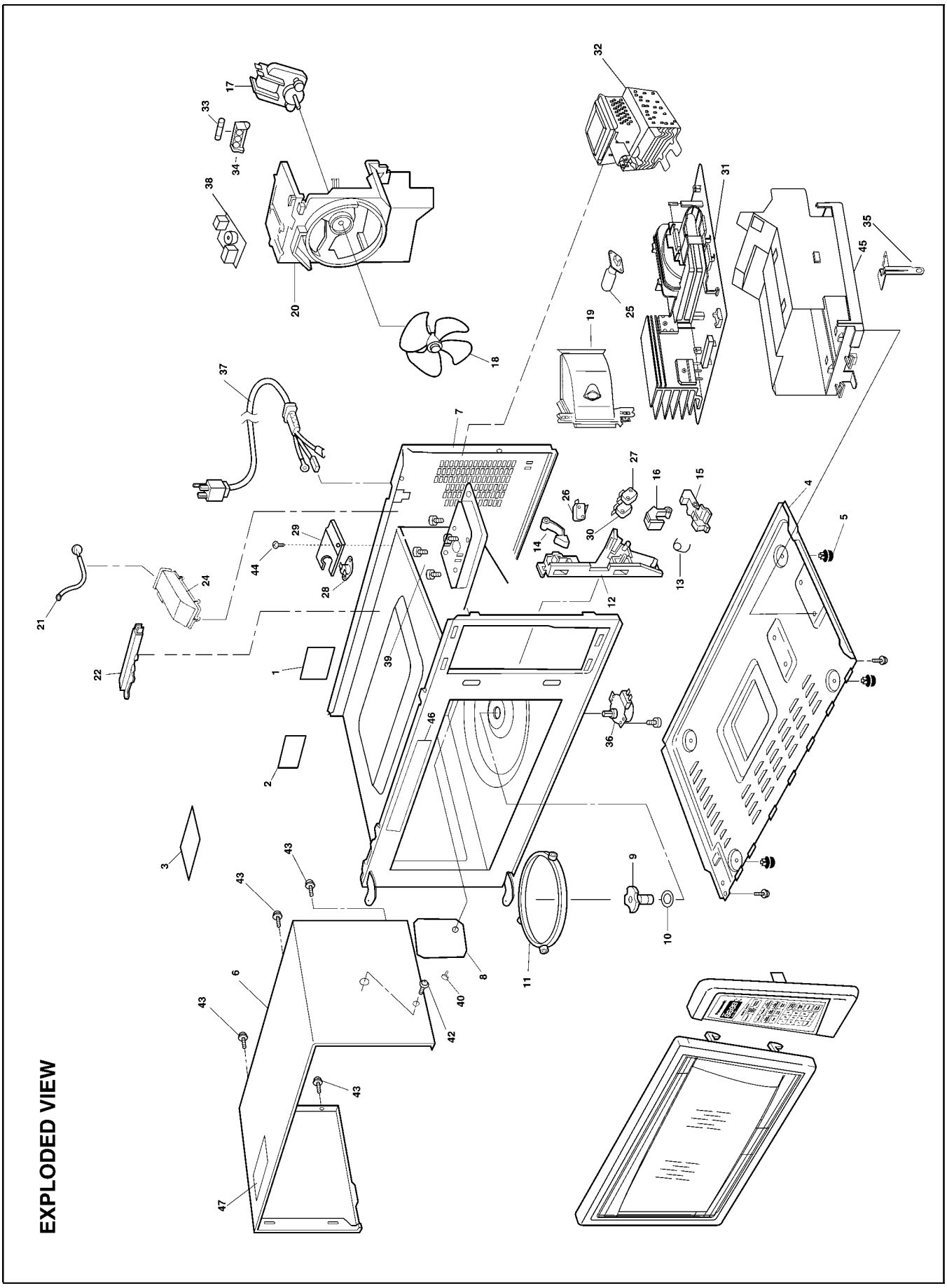


01-035

MOVE PROBE ALONG SHADED AREA(//////)AROUND EXHAUST OPENINGS(as shown)AND AROUND AIR INLET OPENING

4 EXPLODED VIEW AND PARTS LIST

4.1. EXPLODED VIEW



4.2. PARTS LIST

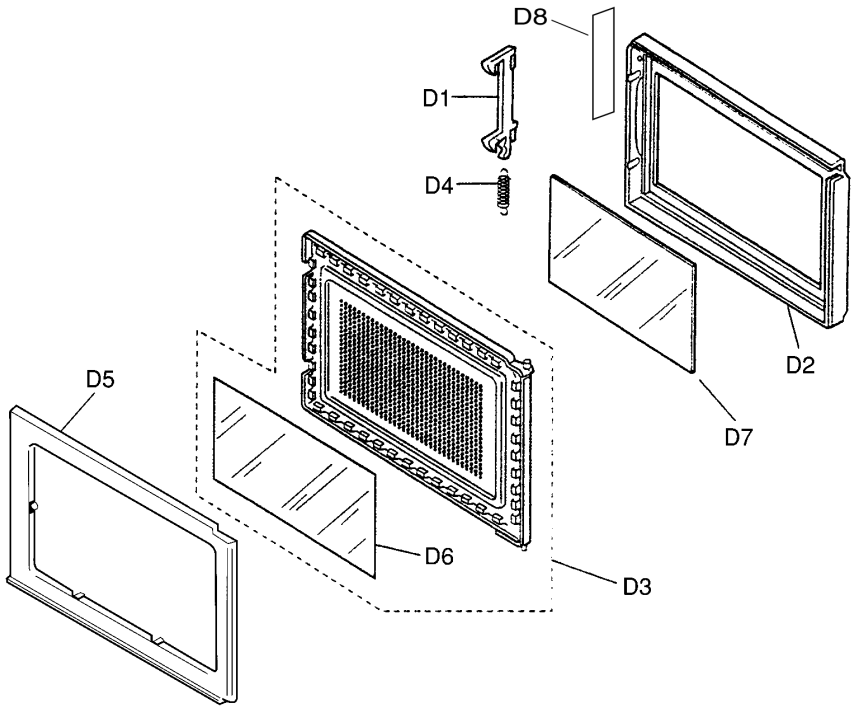
NOTE:

1. When ordering replacement part(s), please use part number(s) shown in this part list.
   Do not use description of the part.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00064W70AP	CAUTION LABEL	1	T6*4SF APH
1		F00069660AP	CAUTION LABEL	1	H**4 APH, S**4 APH
1		F00067600CP	CAUTION LABEL	1	CPH
2		F00076K50SAP	NAME PLATE	1	H664MF APH
2		F00076K50BAP	NAME PLATE	1	H664BF APH
2		F00076K50HAP	NAME PLATE	1	H664WF APH
2		F00076K80BAP	NAME PLATE	1	S654BF APH
2		F00076K80HAP	NAME PLATE	1	S654WF APH
2		F00076K90BAP	NAME PLATE	1	H644BF APH
2		F00076K90HAP	NAME PLATE	1	H644WF APH
2		F00076L00BAP	NAME PLATE	1	S644BF APH
2		F00076L00HAP	NAME PLATE	1	S644WF APH
2		F00076L10BAP	NAME PLATE	1	H634BF APH
2		F00076L10HAP	NAME PLATE	1	H634WF APH
2		F00076L20BAP	NAME PLATE	1	S634BF APH
2		F00076L20HAP	NAME PLATE	1	S634WF APH
2		F00076L30BAP	NAME PLATE	1	H624BF APH
2		F00076L30HAP	NAME PLATE	1	H624WF APH
2		F00076L40BAP	NAME PLATE	1	S624BF APH
2		F00076L40HAP	NAME PLATE	1	S624WF APH
2		F00076L50BAP	NAME PLATE	1	H614BF APH
2		F00076L50HAP	NAME PLATE	1	H614WF APH
2		F00076L60BAP	NAME PLATE	1	S614BF APH
2		F00076L60HAP	NAME PLATE	1	S614WF APH
2		F00076L70BAP	NAME PLATE	1	H604BF APH
2		F00076L70HAP	NAME PLATE	1	H604WF APH
2		F00076L80BAP	NAME PLATE	1	S604BF APH
2		F00076L80HAP	NAME PLATE	1	S604WF APH
2		F00076M00BAP	NAME PLATE	1	H504BF APH
2		F00076M00HAP	NAME PLATE	1	H504WF APH
2		F00076M10BAP	NAME PLATE	1	S504BF APH
2		F00076M10HAP	NAME PLATE	1	S504WF APH
3		F00339660AP	FUSE LABEL	1	
4		F10016K10AP	BASE	1	
5		F10084T00AP	RUBBER FOOT	4	
6		F110D5Y00SAP	CABINET BODY (U)	1	T694SF APH/CPH, T654SF APH
6		F110D5Y30SAP	CABINET BODY (U)	1	T664SF APH, T644SF APH, H**4MF
6		F110D5Y30BAP	CABINET BODY (U)	1	H**4BF, S**4BF
6		F110D5Y30HAP	CABINET BODY (U)	1	H**4WF, S**4WF
7	⚠	F200A5Y30AP	OVEN (U)	1	T6*4SF APH/CPH, H**4 APH/CPH
7	⚠	F200A5Y40AP	OVEN (U)	1	S**4 APH/CPH
8		F20555L00AP	COVER	1	
9		F21315Y00AP	PULLY SHAFT	1	
10		F2177-F80	WASHER	1	
11		F290D9330AP	ROLLER RING (U)	1	
12	⚠	F30206G30AP	DOOR HOOK	1	T6*4SF APH/CPH
12	⚠	F30206K50AP	DOOR HOOK	1	H**4 APH/CPH, S**4 APH/CPH
13		F3097-5L00	LATCH SPRING	1	H**4 APH/CPH, S**4 APH/CPH
14		F31366G30AP	HOOK LEVER A	1	T6*4SF APH/CPH
14		F31366K50AP	HOOK LEVER A	1	H**4 APH/CPH, S**4 APH/CPH
15		F31376G30AP	HOOK LEVER B	1	T6*4SF APH/CPH
15		F31376K50AP	HOOK LEVER B	1	H**4 APH/CPH, S**4 APH/CPH
16		F31386G30AP	HOOK LEVER C	1	T6*4SF APH/CPH
16		F31386K50AP	HOOK LEVER C	1	H**4 APH/CPH, S**4 APH/CPH
17		F400A4T00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
18		F40084T00AP	FAN BLADE	1	
19		F40254T00AP	AIR GUIDE A	1	
20		F41445Y00AP	ORIFICE	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
21		A607S4T00AP	STEAM SENSOR	1	T6*4SF APH/CPH, H6*4 APH/CPH, H504 APH
22		F64508660AP	SENSOR COVER B	1	T6*4SF APH/CPH, H6*4 APH/CPH, H504 APH
24		F65434W00AP	SENSOR COVER C	1	T6*4SF APH/CPH, H6*4 APH/CPH, H504 APH
25		F612E5Y30AP	INCANDESCENT LAMP (U)	1	125V, 60Hz, 20W
26	⚠	J61424T00AP	MICRO SWITCH	1	(PRIMARY LATCH SWITCH) (V-15G-3C25)
27	⚠	J61414T00AP	MICRO SWITCH	1	(SECONDARY LATCH SWITCH) (D3V-16G-3C25)
28	⚠	F61455L00CP	THERMAL CUTOUT	1	CPH (105°C)
29		F66264T00CP	THERMAL CUTOUT INSULATION BRACKET	1	CPH
30	⚠	J61784T00AP	MICRO SWITCH	1	(SHORT SWITCH) (D3V-1G-2C25)
31	⚠	F606Y6G00AP	H.V.INVERTER (U)	1	
32	⚠	2M75P1-21	MAGNETRON	1	APH
32	⚠	2M261-M32G	MAGNETRON	1	CPH
33	⚠	B62308250AP	FUSE	1	18A/120V
34		B62314000AP	FUSE HOLDER	1	APH
35		F66626K50AP	GROUNDING PLATE	1	
36		F63265G60AP	TURNTABLE MOTOR	1	
37	⚠	F900C4T60CP	AC CORD W/PLUG	1	T6*4SF APH
37	⚠	F900C4T00AP	AC CORD W/PLUG	1	H**4 APH, S**4 APH
37	⚠	F900C5Y30CP	AC CORD W/PLUG	1	CPH
38		J692Y4T00CPR	NOISE FILTER (U)	1	CPH
39		XTWFA4+12T	SCREW	4	FOR MAGNETRON
40		XTTFA4+6BN	SCREW	1	FOR COVER
42		XTCA4+12AFM	SCREW	1	FOR CABINET BODY SIDE (T694SF APH/CPH, T654SF APH)
42		XTCA4+12AFS	SCREW	1	FOR CABINET BODY SIDE (T664SF APH, T644SF APH, H**4MF, S**4MF)
42		XTCA4+12AFK	SCREW	1	FOR CABINET BODY SIDE (H**4BF, S**4BF)
42		XTCA4+12AFW	SCREW	1	FOR CABINET BODY SIDE (H**4WF, S**4WF)
43		XTTANE4T12A0	SCREW	4	FOR CABINET BODY
44		XTWAFE4+8S	SCREW	1	CPH (FOR THERMAL CUTOUT)
45		F65856K10AP	INVERTER BRACKET	1	T6*4SF APH
45		F65856K50AP	INVERTER BRACKET	1	EXCEPT T6*4SF APH
46		F03346K10AP	MENU LABEL	1	T694SF APH
46		F03346K10CP	MENU LABEL	1	T694SF CPH
46		F03345Y30AP	MENU LABEL	1	T664SF APH, T654SF APH, T644SF APH, H664MF/BF/WF APH
46		F03345Y40AP	MENU LABEL	1	S654BF/WF APH
46		F03345Y70AP	MENU LABEL	1	H634BF/WF APH, H674WF CPH
46		F03346L20AP	MENU LABEL	1	S634BF/WF APH
47		F02445Y00AP	CAUTION LABEL	1	T654SF APH

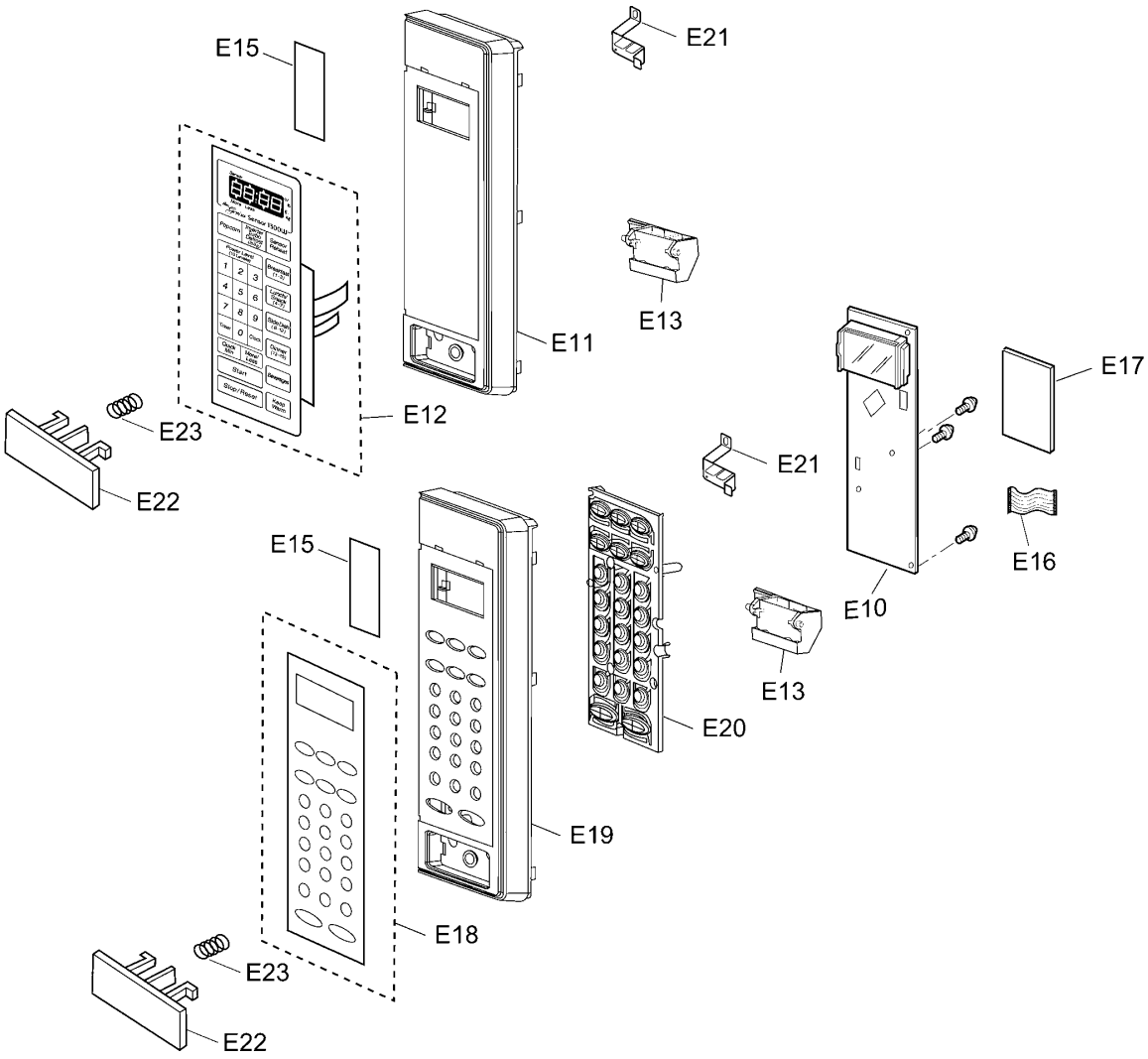
4.3. DOOR ASSEMBLY



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F3018-1200	DOOR KEY A	1	T6*4SF APH/CPH
D1		F30184Y30XN	DOOR KEY A	1	H**4 APH, S**4 APH
D2		F302A5Y00SAP	DOOR A (U)	1	T6*4SF APH/CPH
D2	⚠	F30016K50SAP	DOOR A	1	H664MF APH/CPH
D2	⚠	F30016K50BAP	DOOR A	1	H664BFAPH/CPH, S654BF APH, H644BF APH, S644BF APH, H634BF APH, S634BF APH
D2	⚠	F30016K50HAP	DOOR A	1	H664WF APH/CPH, S654WF APH, H644WF APH, S644WF APH, H634WF APH, S634WF APH/CPH, H674WF CPH, S614WF CPH, S604WF CPH
D2	⚠	F30015Y30BAP	DOOR A	1	H624BF APH, S624BF APH, H614BF APH, S614BF APH, H604BF APH, S604BF APH
D2	⚠	F30015Y30HAP	DOOR A	1	H624WF APH, S624WF APH/CPH, H614WF APH, S614WF APH, H604WF APH, S604WF APH
D2	⚠	F30015A00BAP	DOOR A	1	H504BF APH, S504BF APH
D2	⚠	F30015A00SAP	DOOR A	1	S504MF CPH
D2	⚠	F30014T00HAP	DOOR A	1	H504WF APH, S504WF APH/CPH
D3	⚠	F302K5L00AP	DOOR E (U)	1	EXCEPT H5*4 APH/CPH & S5*4 APH/CPH
D3	⚠	F302K4T00AP	DOOR E (U)	1	H5*4 APH, S5*4 APH/CPH
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30854T00AP	DOOR C	1	
D6	⚠	F31454T00AP	DOOR SCREEN A	1	
D7		F31465Y00SAP	DOOR SCREEN B	1	T694SF APH/CPH, T654SF APH, T644SF APH
D7		F31465Y20BAP	DOOR SCREEN B	1	T664SF APH
D7		F31466K50BAP	DOOR SCREEN B	1	H664MF APH/CPH, H664BF APH/CPH, S654BF APH, H644BF APH, S644BF APH, H634BF APH, S634BF APH
D7		F31466K50HAP	DOOR SCREEN B	1	H664WF APH/CPH, S654WF APH, H644WF APH, S644WF APH, H634WF APH, S634WF APH/CPH, H674WF CPH, S614WF CPH, S604WF CPH
D7		F31465Y30BAP	DOOR SCREEN B	1	H624BF APH, S624BF APH, H614BF APH, S614BF APH, H604BF APH, S604BF APH
D7		F31465Y30HAP	DOOR SCREEN B	1	H624WF APH, S624WF APH/CPH, H614WF APH, S614WF APH, H604WF APH, S604WF APH
D7		F31464T00BAP	DOOR SCREEN B	1	H504BF APH, S504BF APH, S504MF CPH
D7		F31464T00HAP	DOOR SCREEN B	1	H504WF APH, S504WF APH/CPH
D8		F02459660AP	DHHS LABEL	1	T6*4SF APH, H504BF/WF APH, S504BF/WF APH
D8		F04114180CP	DHHS LABEL	1	T694SF CPH, S504MF/WF CPH

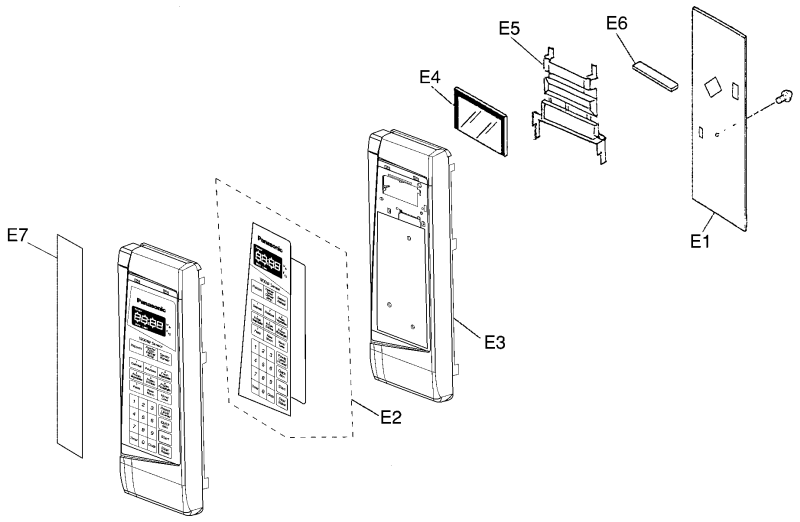
4.4. ESCUTCHEON BASE ASSEMBLY

4.4.1. NN-T6*4 APH/CPH



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E10		F603L6K10AP	D.P.CIRCUIT (AU)	1	T694SF APH
E10		F603L6K10CP	D.P.CIRCUIT (AU)	1	T694SF CPH
E10		F603L5K30AP	D.P.CIRCUIT (AU)	1	T664SF APH, T654SF APH, T644SF APH
E11		F800L5Y00BAP	CONTROL PANEL (U)	1	T664SF APH, T654SF APH, T644SF APH
E12		F630Y6K30BAP	MEMBRANE SWITCH (U)	1	T664SF APH
E12		F630Y6K40SAP	MEMBRANE SWITCH (U)	1	T654SF APH, T644SF APH
E13		F82566K10AP	DOOR OPENING LEVEL	1	T694SF APH/CPH
E13		F82565Y00AP	DOOR OPENING LEVEL	1	T664SF APH, T654SF APH, T644SF APH
E15		F00076K10AP	NAME PLATE	1	T694SF APH
E15		F00076K30AP	NAME PLATE	1	T664SF APH
E15		F00076K40AP	NAME PLATE	1	T654SF APH
E15		F00076Q50AP	NAME PLATE	1	T644SF APH
E15		F00076K10CP	NAME PLATE	1	T694SF CPH
E16		F66164W20AP	FLAT CABLE	1	T694SF APH/CPH
E17		F603Y6K10AP	D.P.CIRCUIT (DU)	1	T694SF APH
E17		F603Y5W00CP	D.P.CIRCUIT (DU)	1	T694SF CPH
E18		F83376K10SAP	MEMBRANE SHEET	1	T694SF APH
E18		F83376K10SCP	MEMBRANE SHEET	1	T694SF CPH
E19		F800L6K10AP	CONTROL PANEL (U)	1	T694SF APH/CPH
E20		F82986K10AP	BUTTON	1	T694SF APH/CPH
E21		F90095X00AP	GROUNDING PANEL	1	T6*4SF APH/CPH
E22		F80725Y00SAP	DOOR OPENING BUTTON	1	T6*4SF APH/CPH
E23		F80375K00AP	COOK BUTTON SPRING	1	T6*4SF APH/CPH

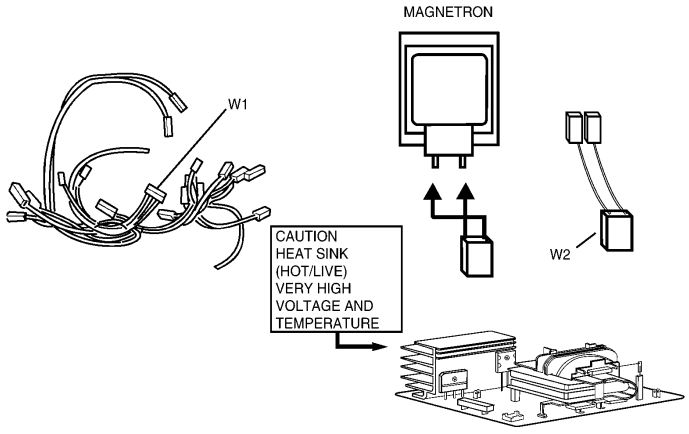
4.4.2. NN-H**4 APH/CPH, S**4 APH/CPH



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L6K50AP	D.P.CIRCUIT	1	H664MF/BF/WF APH
E1		F603L6K80AP	D.P.CIRCUIT	1	S654BF/WF APH
E1		F603L6K90AP	D.P.CIRCUIT	1	H644BF/WF APH
E1		F603L6L00AP	D.P.CIRCUIT	1	S644BF/WF APH
E1		F603L6L10AP	D.P.CIRCUIT	1	H634BF/WF APH
E1		F603L6L20AP	D.P.CIRCUIT	1	S634BF/WF APH
E1		F603L6L30AP	D.P.CIRCUIT	1	H624BF/WF APH
E1		F603L6L40AP	D.P.CIRCUIT	1	S624BF/WF APH
E1		F603L6L50AP	D.P.CIRCUIT	1	H614BF/WF APH
E1		F603L6L60AP	D.P.CIRCUIT	1	S614BF/WF APH
E1		F603L6L70AP	D.P.CIRCUIT	1	H604BF/WF APH, H504BF/WF APH
E1		F603L6L80AP	D.P.CIRCUIT	1	S604BF/WF APH, S504BF/WF APH
E1		F603L6K50CP	D.P.CIRCUIT	1	H664MF/BF/WF CPH
E1		F603L6L30CP	D.P.CIRCUIT	1	H674WF CPH
E1		F603L6L20CP	D.P.CIRCUIT	1	S634WF CPH
E1		F603L6L40CP	D.P.CIRCUIT	1	S624WF CPH
E1		F603L6L60CP	D.P.CIRCUIT	1	S614WF CPH
E1		F603L6L80CP	D.P.CIRCUIT	1	S604WF CPH
E1		F603L6M10CP	D.P.CIRCUIT	1	S504MF/WF CPH
E2		F630Y6K50SAP	MEMBRANE SWITCH (U)	1	H664MF APH
E2		F630Y6K50BAP	MEMBRANE SWITCH (U)	1	H664BF APH
E2		F630Y6K50HAP	MEMBRANE SWITCH (U)	1	H664WF APH
E2		F630Y6K80BAP	MEMBRANE SWITCH (U)	1	S654BF APH
E2		F630Y6K80HAP	MEMBRANE SWITCH (U)	1	S654WF APH
E2		F630Y6K90BAP	MEMBRANE SWITCH (U)	1	H644BF APH
E2		F630Y6K90HAP	MEMBRANE SWITCH (U)	1	H644WF APH
E2		F630Y6L00BAP	MEMBRANE SWITCH (U)	1	S644BF APH
E2		F630Y6L00HAP	MEMBRANE SWITCH (U)	1	S644WF APH
E2		F630Y6L10BAP	MEMBRANE SWITCH (U)	1	H634BF APH
E2		F630Y6L10HAP	MEMBRANE SWITCH (U)	1	H634WF APH
E2		F630Y6L20BAP	MEMBRANE SWITCH (U)	1	S634BF APH
E2		F630Y6L20HAP	MEMBRANE SWITCH (U)	1	S634WF APH
E2		F630Y6L30BAP	MEMBRANE SWITCH (U)	1	H624BF APH
E2		F630Y6L30HAP	MEMBRANE SWITCH (U)	1	H624WF APH
E2		F630Y6L40BAP	MEMBRANE SWITCH (U)	1	S624BF APH
E2		F630Y6L40HAP	MEMBRANE SWITCH (U)	1	S624WF APH
E2		F630Y6L50BAP	MEMBRANE SWITCH (U)	1	H614BF APH
E2		F630Y6L50HAP	MEMBRANE SWITCH (U)	1	H614WF APH
E2		F630Y6L60BAP	MEMBRANE SWITCH (U)	1	S614BF APH
E2		F630Y6L60HAP	MEMBRANE SWITCH (U)	1	S614WF APH
E2		F630Y6L70BAP	MEMBRANE SWITCH (U)	1	H604BF APH
E2		F630Y6L70HAP	MEMBRANE SWITCH (U)	1	H604WF APH
E2		F630Y6L80BAP	MEMBRANE SWITCH (U)	1	S604BF APH
E2		F630Y6L80HAP	MEMBRANE SWITCH (U)	1	S604WF APH
E2		F630Y6M00BAP	MEMBRANE SWITCH (U)	1	H504BF APH
E2		F630Y6M00HAP	MEMBRANE SWITCH (U)	1	H504WF APH
E2		F630Y6M10BAP	MEMBRANE SWITCH (U)	1	S504BF APH

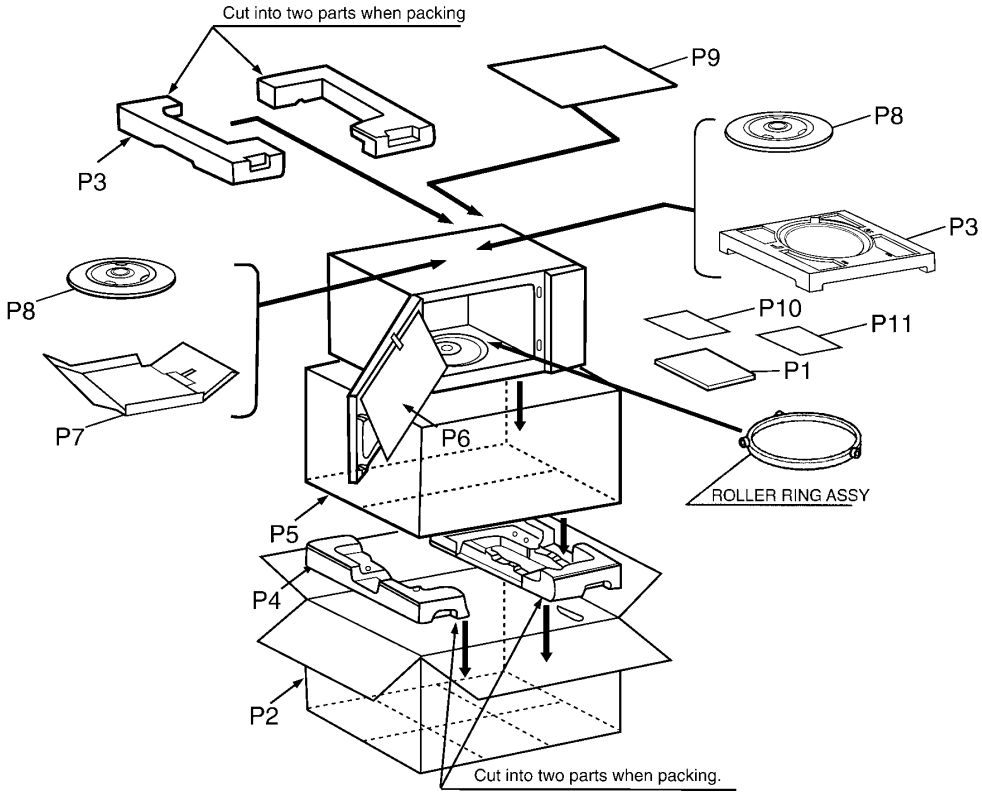
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E2		F630Y6M10HAP	MEMBRANE SWITCH (U)	1	S504WF APH
E2		F630Y6K50SCP	MEMBRANE SWITCH (U)	1	H664MF CPH
E2		F630Y6K50BCP	MEMBRANE SWITCH (U)	1	H664BF CPH
E2		F630Y6K50HCP	MEMBRANE SWITCH (U)	1	H664WF CPH
E2		F630Y6L30HCP	MEMBRANE SWITCH (U)	1	H674WF CPH
E2		F630Y6L20HCP	MEMBRANE SWITCH (U)	1	S634WF CPH
E2		F630Y6L40HCP	MEMBRANE SWITCH (U)	1	S624WF CPH
E2		F630Y6L60HCP	MEMBRANE SWITCH (U)	1	S614WF CPH
E2		F630Y6L80HCP	MEMBRANE SWITCH (U)	1	S604WF CPH
E2		F630Y6M10SCP	MEMBRANE SWITCH (U)	1	S504MF CPH
E2		F630Y6M10HCP	MEMBRANE SWITCH (U)	1	S504WF CPH
E3		F80346K50SAP	ESCUTCHEON BASE	1	H664MF APH/CPH
E3		F80346K50BAP	ESCUTCHEON BASE	1	H664BF APH/CPH, S654BF APH, H644BF APH, S644BF APH, H634BF APH, S634BF APH
E3		F80346K50HAP	ESCUTCHEON BASE	1	H664WF APH/CPH, S654WF APH, H644WF APH, S644WF APH, H634WF APH, S634WF APH/CPH, H674WF CPH, S614WF CPH, S604WF CPH
E3		F80345Y30BAP	ESCUTCHEON BASE	1	H624BF APH, S624BF APH, H614BF APH, S614BF APH, H604BF APH, S604BF APH
E3		F80345Y30HAP	ESCUTCHEON BASE	1	H624WF APH, S624WF APH, H614WF APH, S614WF APH, H604WF APH, S604WF APH
E3		F80345L00HAP	ESCUTCHEON BASE	1	S624WF CPH
E3		F80344T00BAP	ESCUTCHEON BASE	1	H504BF APH, S504BF APH
E3		F80344T00SAP	ESCUTCHEON BASE	1	S504MF CPH
E3		F80344T00HAP	ESCUTCHEON BASE	1	H504WF APH, S504WF APH/CPH
E4		AEDDHJ5G60XN	DISPLAY	1	H6*4 APH/CPH, S6*4 APH/CPH, H504 APH, S504 APH/CPH
E5		F66175L00AP	DISPLAY TUBE COVER	1	H6*4 APH/CPH, S6*4 APH/CPH
E5		F66174T00AP	DISPLAY TUBE COVER	1	H5*4 APH, S5*4 APH/CPH
E6		F67005U40XN	RUBBER CONNECTOR	1	H6*4 APH/CPH, S6*4 APH/CPH, H504 APH, S504 APH/CPH
E7		F00076K50SCP	NAME PLATE	1	H664MF CPH
E7		F00076K50BCP	NAME PLATE	1	H664BF CPH
E7		F00076K50HCP	NAME PLATE	1	H664WF CPH
E7		F00076L30HCP	NAME PLATE	1	H674WF CPH
E7		F00076L20HCP	NAME PLATE	1	S634WF CPH
E7		F00076L40HCP	NAME PLATE	1	S624WF CPH
E7		F00076L60HCP	NAME PLATE	1	S614WF CPH
E7		F00076L80HCP	NAME PLATE	1	S604WF CPH
E7		F00076M10SCP	NAME PLATE	1	S504MF CPH
E7		F00076M10HCP	NAME PLATE	1	S504WF CPH

4.5. WIRING MATERIALS



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A6K50AP	LEAD WIRE HARNESS	1	APH
W1		F030A6K50CP	LEAD WIRE HARNESS	1	CPH
W2		F030E5L00AP	H.V.LEAD WIRE	1	APH
W2		F030E4T00CP	H.V.LEAD WIRE	1	T694SF CPH
W2		F030E4T10CP	H.V.LEAD WIRE	1	H**4 CPH, S**4 CPH

4.6. PACKING AND ACCESSORIES

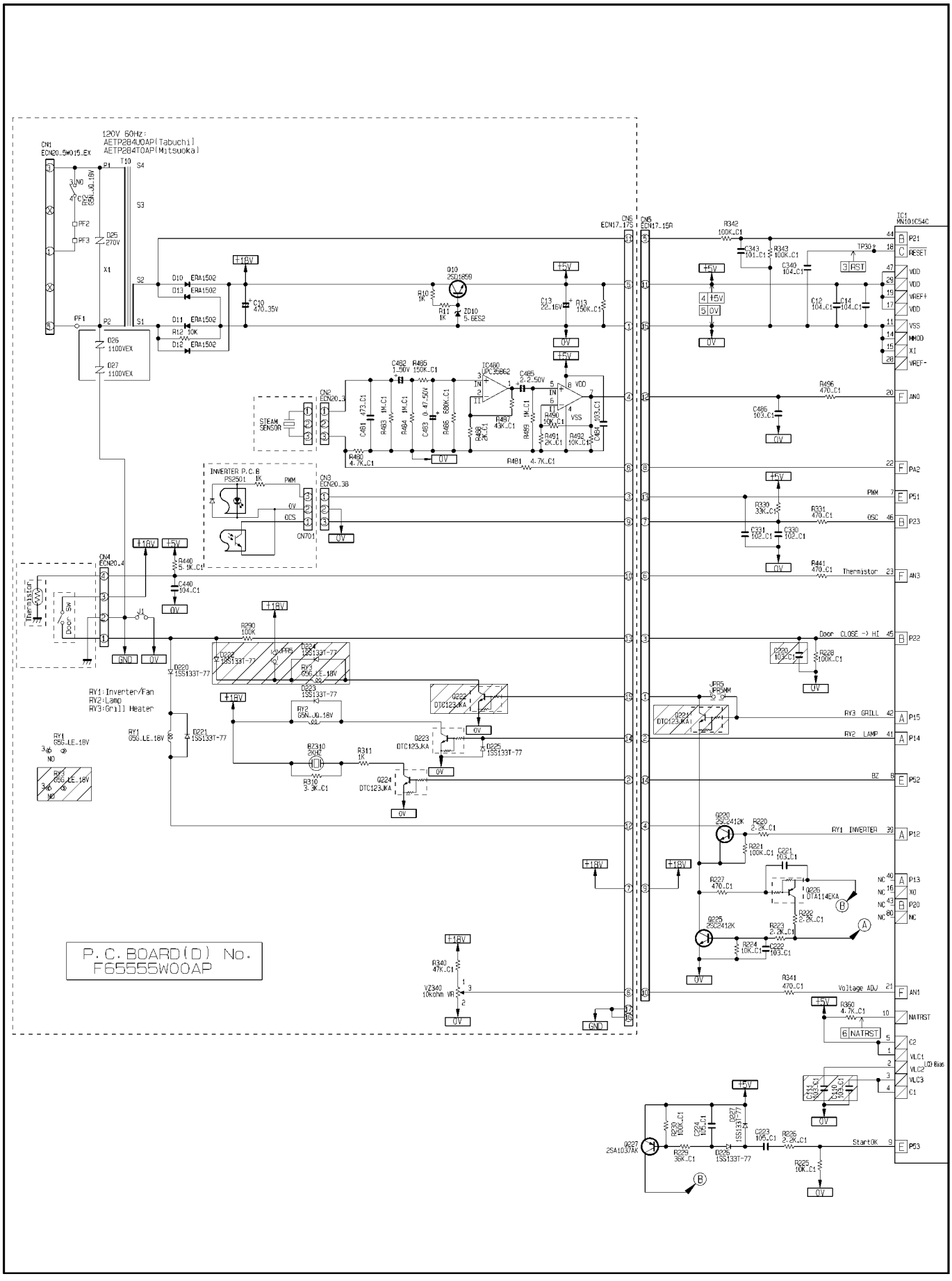


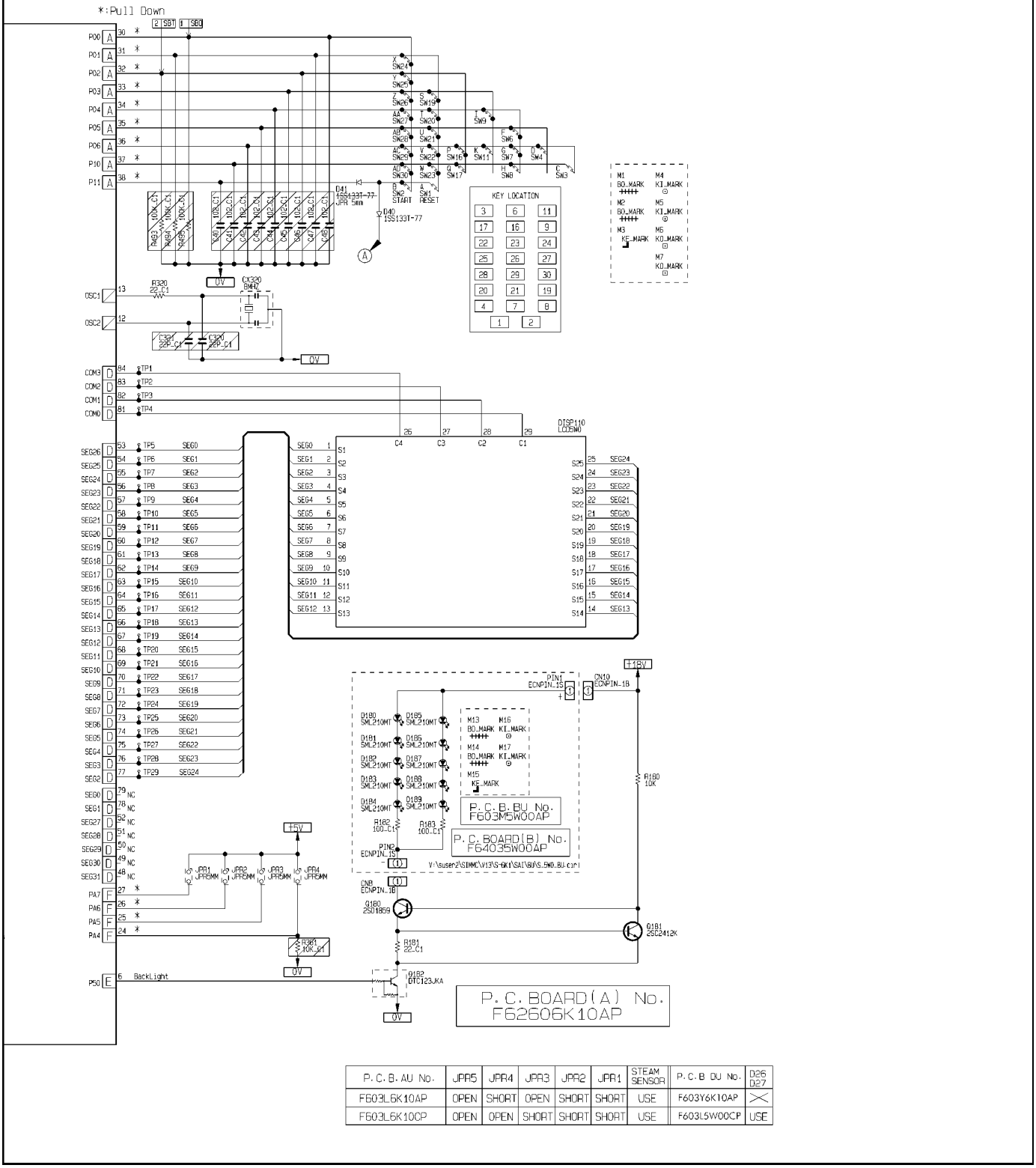
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00036K10AP	INSTRUCTION MANUAL	1	T694SF APH
P1		F00036K50AP	INSTRUCTION MANUAL	1	T664SF APH, T654SF APH, T644SF APH
P1		F00036K50AP	INSTRUCTION MANUAL	1	H664MF/BF/WF APH
P1		F00036K80AP	INSTRUCTION MANUAL	1	S654BF/WF APH
P1		F00036L10AP	INSTRUCTION MANUAL	1	H644BF/WF APH, H634BF/WF APH
P1		F00036L20AP	INSTRUCTION MANUAL	1	S644BF/WF APH, S634BF/WF APH
P1		F00036L30AP	INSTRUCTION MANUAL	1	H624BF/WF APH
P1		F00036L40AP	INSTRUCTION MANUAL	1	S624BF/WF APH
P1		F00036L50AP	INSTRUCTION MANUAL	1	H614BF/WF APH, H604BF/WF APH, H504BF/WF APH
P1		F00036L60AP	INSTRUCTION MANUAL	1	S614BF/WF APH, S604BF/WF APH, S504BF/WF APH
P1		F00036K10CP	INSTRUCTION MANUAL	1	T694SF CPH
P1		F00036K50CP	INSTRUCTION MANUAL	1	H664MF/BF/WF CPH
P1		F00036L30CP	INSTRUCTION MANUAL	1	H674WF CPH
P1		F00036L20CP	INSTRUCTION MANUAL	1	S634WF CPH, S624WF CPH
P1		F00036L80CP	INSTRUCTION MANUAL	1	S614WF CPH, S604WF CPH, S504MF/WF CPH
P2		F01026K10SAP	PACKING CASE, PAPER	1	T694SF APH
P2		F01026K30SAP	PACKING CASE, PAPER	1	T664SF APH
P2		F01026K40SAP	PACKING CASE, PAPER	1	T654SF APH
P2		F01026Q50SAP	PACKING CASE, PAPER	1	T644SF APH
P2		F01026K50SAP	PACKING CASE, PAPER	1	H664MF APH
P2		F01026K50BAP	PACKING CASE, PAPER	1	H664BF APH
P2		F01026K50HAP	PACKING CASE, PAPER	1	H664WF APH
P2		F01026K80BAP	PACKING CASE, PAPER	1	S654BF APH
P2		F01026K80HAP	PACKING CASE, PAPER	1	S654WF APH
P2		F01026K90BAP	PACKING CASE, PAPER	1	H644BF APH
P2		F01026K90HAP	PACKING CASE, PAPER	1	H644WF APH
P2		F01026L00BAP	PACKING CASE, PAPER	1	S644BF APH
P2		F01026L00HAP	PACKING CASE, PAPER	1	S644WF APH
P2		F01026L10BAP	PACKING CASE, PAPER	1	H634BF APH
P2		F01026L10HAP	PACKING CASE, PAPER	1	H634WF APH
P2		F01026L20BAP	PACKING CASE, PAPER	1	S634BF APH
P2		F01026L20HAP	PACKING CASE, PAPER	1	S634WF APH
P2		F01026L30BAP	PACKING CASE, PAPER	1	H624BF APH
P2		F01026L30HAP	PACKING CASE, PAPER	1	H624WF APH
P2		F01026L40BAP	PACKING CASE, PAPER	1	S624BF APH
P2		F01026L40HAP	PACKING CASE, PAPER	1	S624WF APH
P2		F01026L50BAP	PACKING CASE, PAPER	1	H614BF APH
P2		F01026L50HAP	PACKING CASE, PAPER	1	H614WF APH
P2		F01026L60BAP	PACKING CASE, PAPER	1	S614BF APH
P2		F01026L60HAP	PACKING CASE, PAPER	1	S614WF APH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P2		F01026L70BAP	PACKING CASE, PAPER	1	H604BF APH
P2		F01026L70HAP	PACKING CASE, PAPER	1	H604WF APH
P2		F01026L80BAP	PACKING CASE, PAPER	1	S604BF APH
P2		F01026L80HAP	PACKING CASE, PAPER	1	S604WF APH
P2		F01026M00BAP	PACKING CASE, PAPER	1	H504BF APH
P2		F01026M00HAP	PACKING CASE, PAPER	1	H504WF APH
P2		F01026M10BAP	PACKING CASE, PAPER	1	S504BF APH
P2		F01026M10HAP	PACKING CASE, PAPER	1	S504WF APH
P2		F01026K10SCP	PACKING CASE, PAPER	1	T694SF CPH
P2		F01026K50SCP	PACKING CASE, PAPER	1	H664MF CPH
P2		F01026K50BCP	PACKING CASE, PAPER	1	H664BF CPH
P2		F01026K50HCP	PACKING CASE, PAPER	1	H664WF CPH
P2		F01026L30HCP	PACKING CASE, PAPER	1	H674WF CPH
P2		F01026L20HCP	PACKING CASE, PAPER	1	S634WF CPH
P2		F01026L40HCP	PACKING CASE, PAPER	1	S624WF CPH
P2		F01026L60HCP	PACKING CASE, PAPER	1	S614WF CPH
P2		F01026L80HCP	PACKING CASE, PAPER	1	S604WF CPH
P2		F01026M10SCP	PACKING CASE, PAPER	1	S504MF CPH
P2		F01026M10HCP	PACKING CASE, PAPER	1	S504WF CPH
P3		F01046K50AP	UPPER FILLER	1	EXCEPT H504 APH & S504 APH/CPH
P3		F01045L30AP	UPPER FILLER		H504 APH, S504 APH/CPH
P4		F01055L00AP	LOWER FILLER	1	EXCEPT H504 APH & S504 APH/CPH
P4		F01054T00AP	LOWER FILLER		H504 APH, S504 APH/CPH
P5		F01068100XN	P.E.BAG	1	
P6		F01078100XN	DOOR SHEET	1	
P7		F01085T20RP	TRAY PACKING	1	H504 APH, S504 APH/CPH
P8		F06014T00AP	COOKING TRAY	1	
P9		F01924T00AP	SHEET	1	T644SF APH, H**4MF/BF, S**4MF/BF
P10		F00065G40AP	CAUTION LABEL	1	APH
P11		F04456K10AP	OVERLAY	1	T694SF APH
P11		F04456K10CP	OVERLAY	1	T694SF CPH
P11		F04456K50SCP	OVERLAY	1	H664MF CPH
P11		F04456K50BCP	OVERLAY	1	H664BF CPH
P11		F04456K50HCP	OVERLAY	1	H664WF CPH
P11		F04456L30CP	OVERLAY	1	H674WF CPH
P11		F04456L20CP	OVERLAY	1	S634WF CPH
P11		F04456L40CP	OVERLAY	1	S624WF CPH
P11		F04456L60CP	OVERLAY	1	S614WF CPH
P11		F04456L80CP	OVERLAY	1	S604WF CPH
P11		F04456M10SCP	OVERLAY	1	S504MF CPH
P11		F04456M10HCP	OVERLAY	1	S504WF CPH

5 DIGITAL PROGRAMMER CIRCUIT

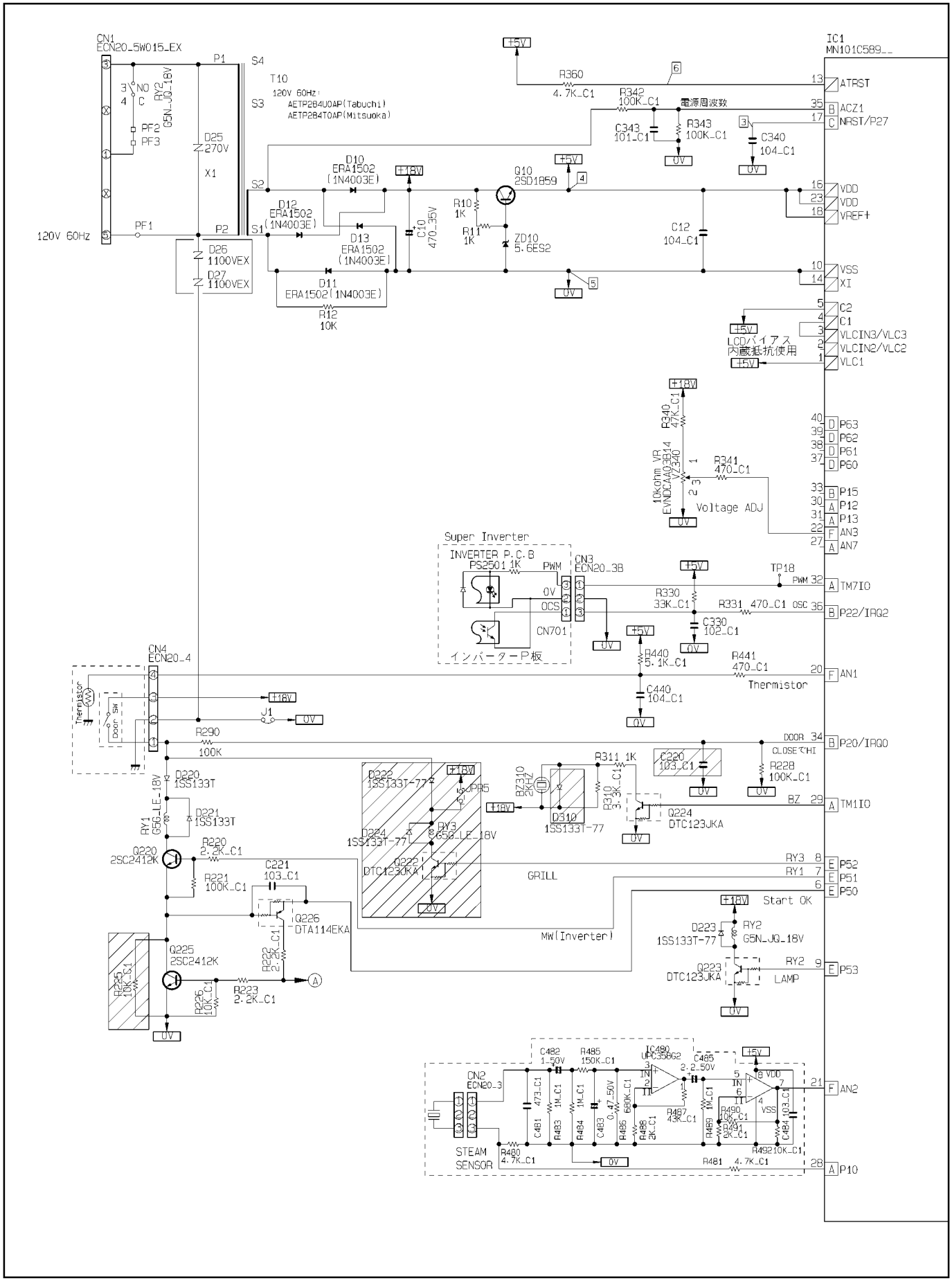
5.1. NN-T694SF APH/CPH

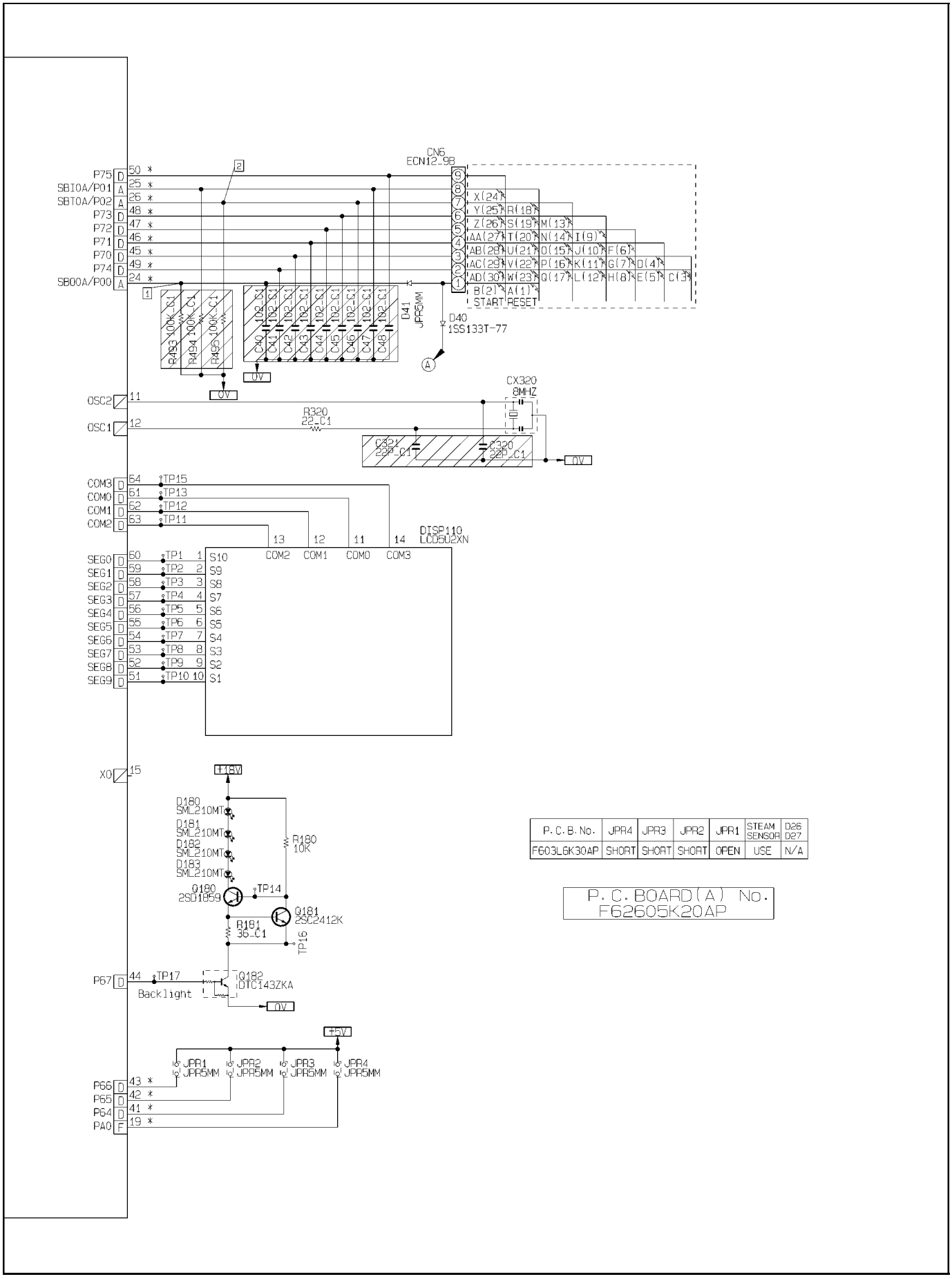




P.C.B.AU No.	JPR5	JPR4	JPR3	JPR2	JPR1	STEAM SENSOR	P.C.B BU No.	D26 D27
F603L6K10AP	OPEN	SHORT	OPEN	SHORT	SHORT	USE	F603Y6K10AP	✕
F603L6K10CP	OPEN	OPEN	SHORT	SHORT	SHORT	USE	F603L5W00CP	USE

5.2. NN-T664SF APH, T654SF APH, T644SF APH

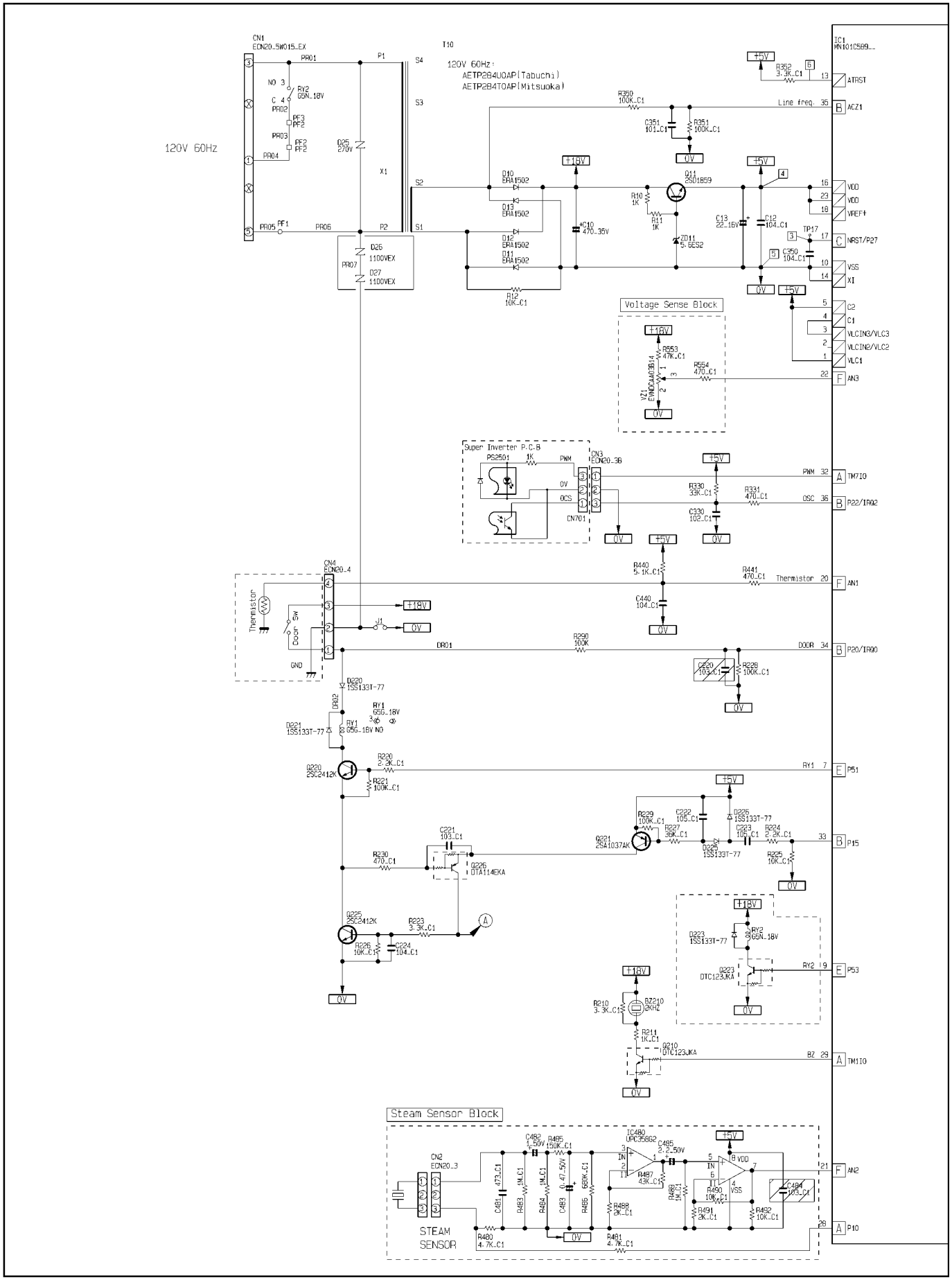


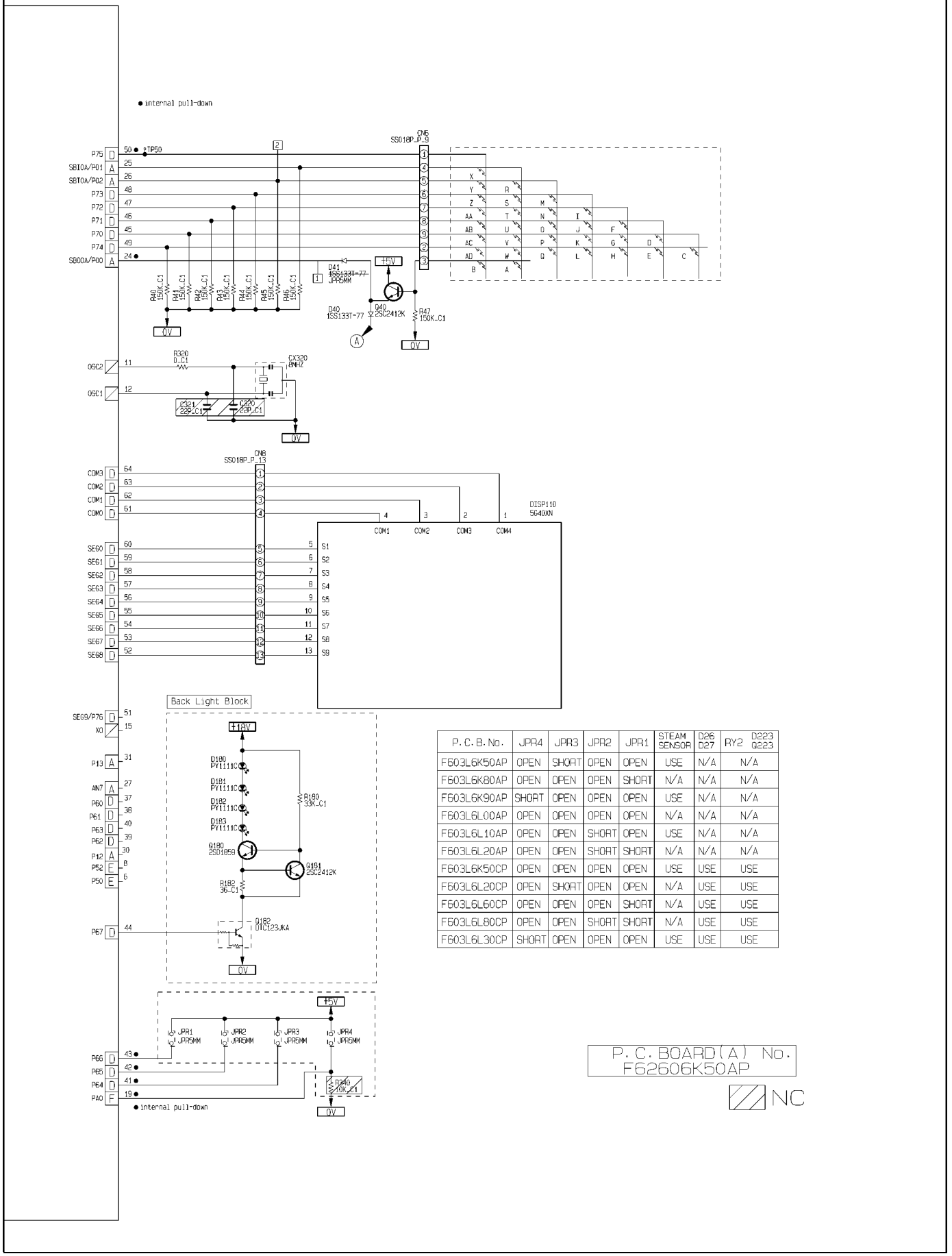


P. C. B. No.	JPR4	JPR3	JPR2	JPR1	STEAM SENSOR	D26 D27
F603L6K30AP	SHORT	SHORT	SHORT	OPEN	USE	N/A

P. C. BOARD(A) No.
F62605K20AP

5.3. NN-H664 APH/CPH, H674 CPH, S654 APH, H644 APH, S644 APH, H634 APH, S634 APH/CPH, S614 CPH, S604 CPH



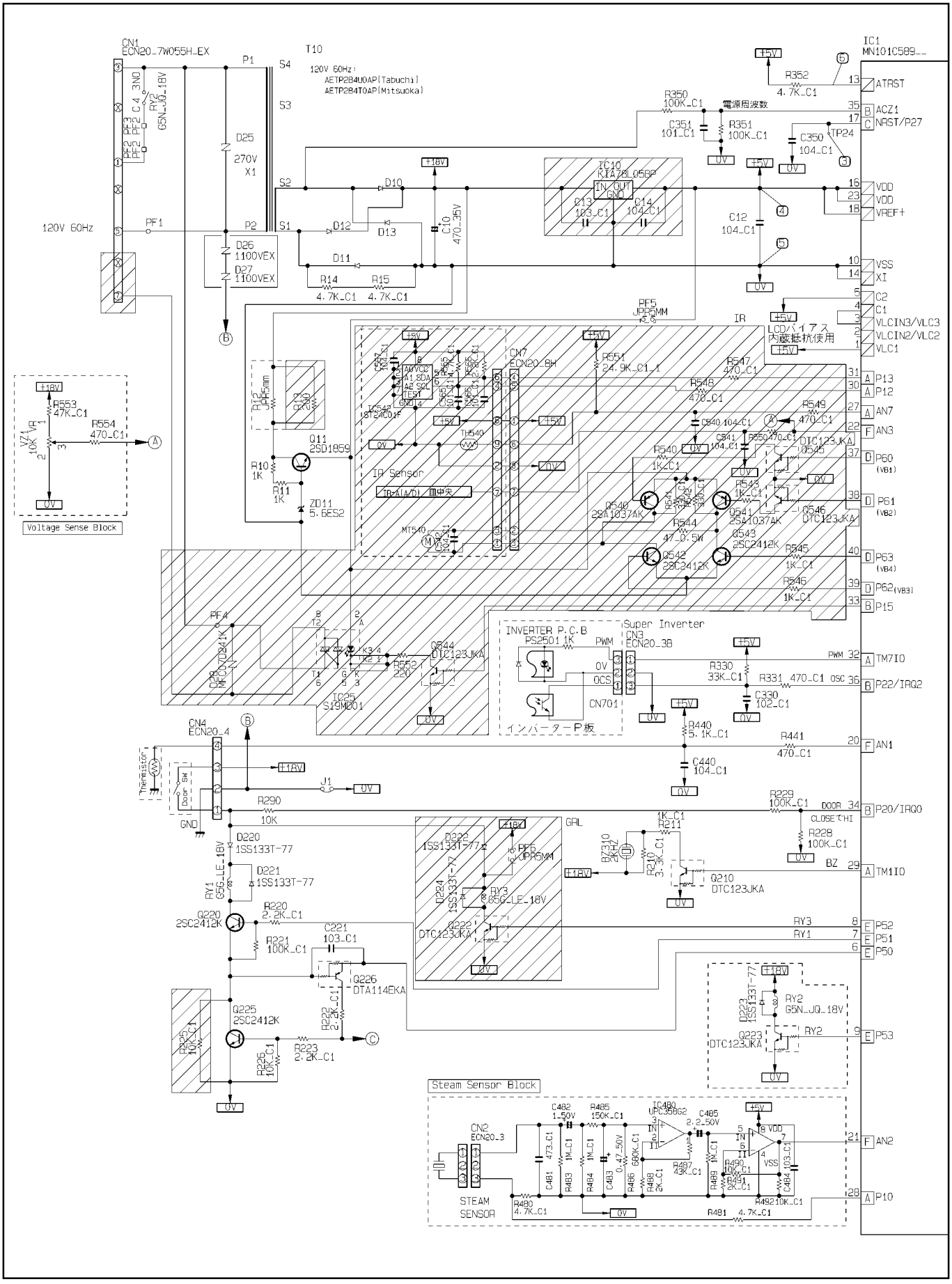


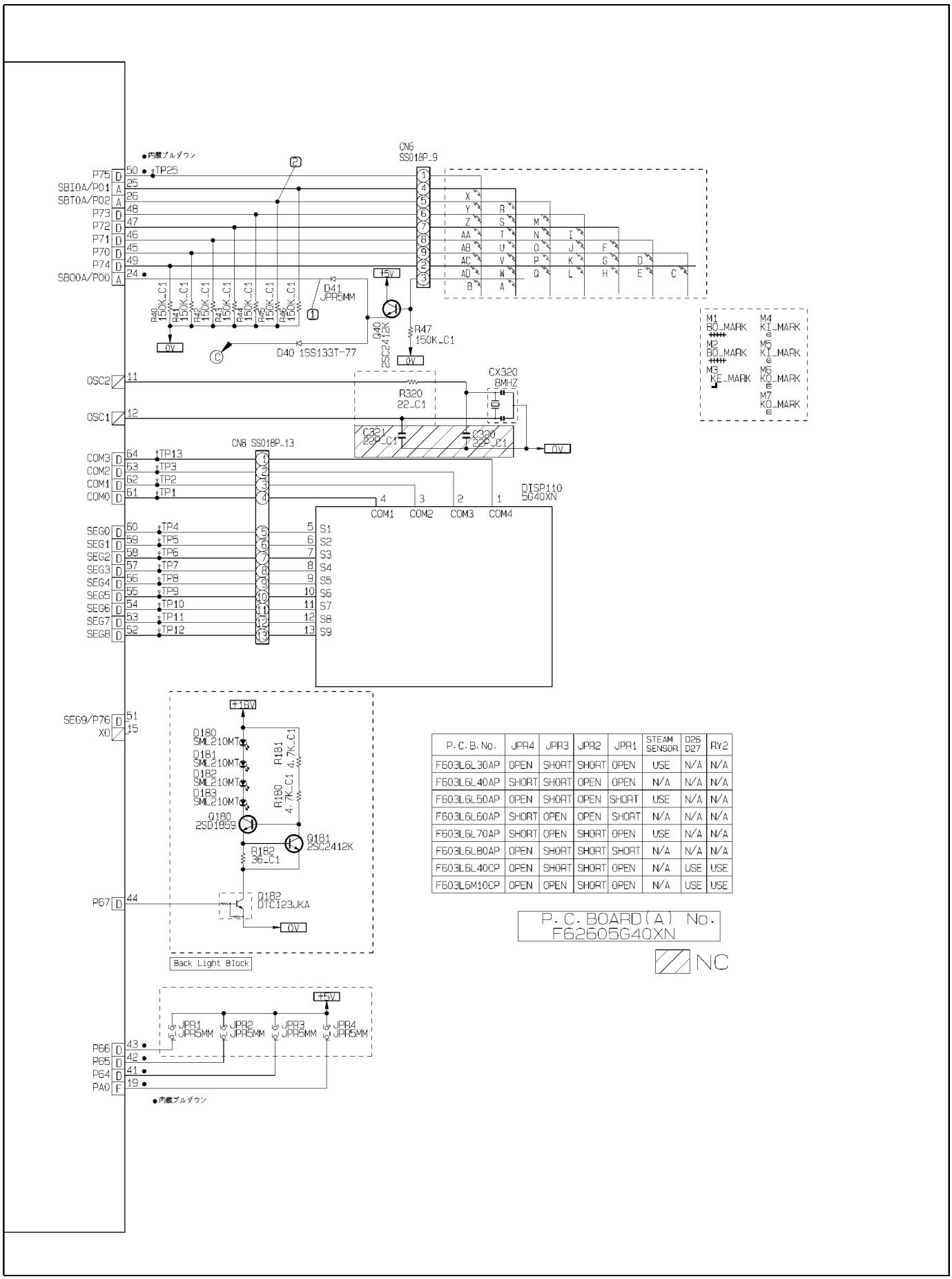
P.C.B.No.	JPR4	JPR3	JPR2	JPR1	STEAM SENSOR	D26 D27	RY2 D223 Q223
F603L6K50AP	OPEN	SHORT	OPEN	OPEN	USE	N/A	N/A
F603L6K80AP	OPEN	OPEN	OPEN	SHORT	N/A	N/A	N/A
F603L6K90AP	SHORT	OPEN	OPEN	OPEN	USE	N/A	N/A
F603L6L00AP	OPEN	OPEN	OPEN	OPEN	N/A	N/A	N/A
F603L6L10AP	OPEN	OPEN	SHORT	OPEN	USE	N/A	N/A
F603L6L20AP	OPEN	OPEN	SHORT	SHORT	N/A	N/A	N/A
F603L6K50CP	OPEN	OPEN	OPEN	OPEN	USE	USE	USE
F603L6L20CP	OPEN	SHORT	OPEN	OPEN	N/A	USE	USE
F603L6L60CP	OPEN	OPEN	OPEN	SHORT	N/A	USE	USE
F603L6L80CP	OPEN	OPEN	SHORT	SHORT	N/A	USE	USE
F603L6L30CP	SHORT	OPEN	OPEN	OPEN	USE	USE	USE

P.C.BOARD(A) No.
F62606K50AP

NC

5.4. NN-H624 APH, S624 APH/CPH, H614 APH, S614 APH, H604 APH, S604 APH, H504 APH, S504 APH/CPH





P.C.B.No.	JPR4	JPR3	JPR2	JPR1	STEAM SENSOR	D26 D27	RY2
F603L6L30AP	OPEN	SHORT	SHORT	OPEN	USE	N/A	N/A
F603L6L40AP	SHORT	SHORT	OPEN	OPEN	N/A	N/A	N/A
F603L6L50AP	OPEN	SHORT	OPEN	SHORT	USE	N/A	N/A
F603L6L60AP	SHORT	OPEN	OPEN	SHORT	N/A	N/A	N/A
F603L6L70AP	SHORT	OPEN	SHORT	OPEN	USE	N/A	N/A
F603L6L80AP	OPEN	SHORT	SHORT	SHORT	N/A	N/A	N/A
F603L6L40CP	OPEN	SHORT	SHORT	OPEN	N/A	USE	USE
F603L6M10CP	OPEN	OPEN	SHORT	OPEN	N/A	USE	USE

P.C.BOARD(A) No.
F62605G40XN

NC

5.5. PARTS LIST

5.5.1. NN-H**4 APH/CPH, NN-S**4 APH/CPH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ210		AEFBAT2001	BUZZER	1	2.0KHz (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
BZ310		AEFBAT2001	BUZZER	1	2.0KHz (H624 APH, H614 APH, H604 APH, H504 APH, S624 APH, S614 APH, S604 APH, S504 APH/CPH)
C351		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C221		AECUU06F103Z	CHIP CAPACITOR	1	0.01µF/50V (H624 APH, H614 APH, H604 APH, H504 APH, S624 APH/CPH, S614 APH, S604 APH, S504 APH/CPH)
C484		AECUU06F103Z	CHIP CAPACITOR	1	0.01µF/50V (H624 APH, H614 APH, H604 APH, H504 APH)
C12, C350, C440		AECUT06F104Z	CHIP CAPACITOR	3	0.1µF/25V
C224		AECUT06F104Z	CHIP CAPACITOR	1	0.1µF/25V (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047µF/50V (H**4 APH/CPH)
C222, C223		AECUN06F105Z	CHIP CAPACITOR	2	1µF/50V (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
C10		AECETK1V471B	AL CHEM CAPACITOR	1	470µF/35V
C482		AECETS1H010B	AL CHEM CAPACITOR	1	1µF/50V (H**4 APH/CPH)
C483		AECETS1HR47B	AL CHEM CAPACITOR	1	0.47µF/50V (H**4 APH/CPH)
C485		AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2µF/50V (H**4 APH/CPH)
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22µF/16V (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
CN1		AEEMXH01505W	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin (H**4 APH/CPH)
CN3		F03524U00AP	CONNECTOR	1	3 Pin
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
D10-D13		AESSRCT1A6-E	DIODE	4	
D40, D220, D221		AESS133T-77	DIODE	3	
D223		AESS133T-77	DIODE	1	CPH
D225, D226		AESS133T-77	DIODE	2	(H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
D25		AERZ271KD10A	VARSITOR	1	
D26, D27		AERZ102KD10A	VARISTOR	2	CPH
D180-D183		AESQPY1112CK	CHIP-LED	4	(H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
D180-D183		AESQPY1112H	CHIP-LED	4	(H624 APH, H614 APH, H604 APH, H504 APH, S624 APH/CPH, S614 APH, S604 APH, S504 APH/CPH)
IC1		MN101C589EN	L.S.I.	1	APH
IC1		MN101C589EP	L.S.I.	1	CPH
IC480		AEICUPC358G2	IC	1	(H**4 APH/CPH)
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182, Q210		AESC23JKE	CHIP DIGI-TRANSISTOR	2	
Q223		AESC23JKE	CHIP DIGI-TRANSISTOR	1	CPH
Q221		2SA1037AK	CHIP DIGI-TRANSISTOR	1	(H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
Q11, Q180		2SD1859TV2Q	TRANSISTOR	2	
Q40, Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	4	
R320		AERJ06J0R00R	CHIP RESISTOR	1	0Ω, 1/10W, 5%
R211		AERJ06J102R	CHIP RESISTOR	1	1K, 1/10W, 5%
R12, R225		AERJ06J103R	CHIP RESISTOR	2	10K, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
R226		AERJ06J103R	CHIP RESISTOR	1	10K, 1/10W, 5%
R490, R492		AERJ06J103R	CHIP RESISTOR	2	10K, 1/10W, 5% (H**4 APH/CPH)
R221, R228, R229, R350, R351		AERJ06J104R	CHIP RESISTOR	5	100K, 1/10W, 5%
R483, R484, R489		AERJ06J105R	CHIP RESISTOR	3	1M, 1/10W, 5% (H**4 APH/CPH)
R40-R47		AERJ06J154R	CHIP RESISTOR	8	150K, 1/10W, 5%
R485		AERJ06J154R	CHIP RESISTOR	1	150K, 1/10W, 5% (H**4 APH/CPH)
R488, R491		AERJ06J202R	CHIP RESISTOR	2	2K, 1/10W, 5% (H**4 APH/CPH)
R220		AERJ06J222R	CHIP RESISTOR	1	2.2K, 1/10W, 5%
R224		AERJ06J222R	CHIP RESISTOR	1	2.2K, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R222, R223		AERJ06J222R	CHIP RESISTOR	2	2.2K, 1/10W, 5% (H624 APH, H614 APH, H604 APH, H504 APH, S624 APH/CPH, S614 APH, S604 APH, S504 APH/CPH)
R210		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/10W, 5%
R223, R352		AERJ06J332R	CHIP RESISTOR	2	3.3K, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
R180		AERJ06J333R	CHIP RESISTOR	1	33K, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
R330		AERJ06J333R	CHIP RESISTOR	1	33K, 1/10W, 5%
R182		AERJ06J360R	CHIP RESISTOR	1	36Ω, 1/10W, 5%
R227		AERJ06J363R	CHIP RESISTOR	1	36K, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
R487		AERJ06J433R	CHIP RESISTOR	1	43K, 1/10W, 5% (H**4 APH/CPH)
R230		AERJ06J471R	CHIP RESISTOR	1	470Ω, 1/10W, 5% (H664 APH/CPH, H644 APH, H634 APH, H674 CPH, S654 APH, S644 APH, S634 APH, S634 CPH, S614 CPH, S604 CPH)
R331, R441, R554		AERJ06J471R	CHIP RESISTOR	3	470Ω, 1/10W, 5%
R14, R15, R180, R181, R352		AERJ06J472R	CHIP RESISTOR	5	4.7K, 1/10W, 5% (H624 APH, H614 APH, H604 APH, H504 APH, S624 APH/CPH, S614 APH, S604 APH, S504 APH/CPH)
R480, R481		AERJ06J472R	CHIP RESISTOR	2	4.7K, 1/10W, 5% (H**4 APH/CPH)
R553		AERJ06J473R	CHIP RESISTOR	1	47K, 1/10W, 5%
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/10W, 5%
R486		AERJ06J684R	CHIP RESISTOR	1	680K, 1/10W, 5% (H**4 APH/CPH)
R10, R11		AERDY2TJ102T	CARBON RESISTOR	2	1K, 1/4W, 5%
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 5%
VZ1		AEVNNV6TL103	VARISTOR	1	10KΩVR
RY1		AEGG5G1A18	POWER RELAY	1	
RY2		AEBLD118	POWER RELAY	1	CPH
T10		AETP284U0AP	LOW VOLTAGE TRANSFORMER	1	
ZD11		AESZMTZJ5R6B	ZENER DIODE	1	

5.5.2. NN-T694SF/T664SF/T654SF/T644SF

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C221		AECUU06F103Z	CHIP CAPACITOR	1	0.01µF/50V
C222, C486		AECUU06F103Z	CHIP CAPACITOR	2	0.01µF/50V (T694SF)
C484		AECUU06F103Z	CHIP CAPACITOR	1	0.01µF/50V (T664SF, T654SF, T644SF)
C343		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C12, C340, C440		AECUT06F104Z	CHIP CAPACITOR	3	0.1µF/25V
C223, C224		AECUN06F105Z	CHIP CAPACITOR	2	1µF/50V (T694SF)
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C331		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V (T694SF)
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047µF/50V
C10		AECETK1V471B	AL CHEM CAPACITOR	1	470µF/35V
C482		AECETS1H010B	AL CHEM CAPACITOR	1	1µF/50V
C483		AECETS1HR47B	AL CHEM CAPACITOR	1	0.47µF/50V
C485		AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2µF/50V
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22µF/16V (T694SF)
PIN1, PIN2		AEPINIPS-1E7	PIN	2	(T694SF)
CN1		AEEMXH01505W	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin
CN3		F03524U50AP	CONNECTOR	1	3 Pin
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN5		AEEM9604S15F	CONNECTOR	1	15 Pin (T694SF)
CN6		AEEM9604S15C	CONNECTOR	1	(T694SF)
CN6		AEEM09FDZBTM	CONNECTOR	1	9 Pin (T664SF, T654SF, T644SF)
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
DISP110		AEDDHJ5W00AP	LCD	1	(T694SF)
DISP1		AEDDHJ5U20XN	LCD	1	(T664SF, T654SF, T644SF)
DISP110 HOLDER		F66175W00AP	LCD HOLDER	1	(T694SF)
DISP110 HOLDER		F66174U20AP	LCD HOLDER	1	(T664SF, T654SF, T644SF)
		F67525E40XN	DIFFUSION SHEET	1	(T694SF)
D10-D13		AESSRCT1A6-E	DIODE	4	
D40, D220, D221		AESS133T-77	DIODE	3	
D225, D226, D227		AESS133T-77	DIODE	3	(T694SF)
D223		AESS133T-77	DIODE	1	CPH
D25		AERZ271KD10A	VARSITOR	1	
D26, D27		AERZ102KD10A	VARSITOR	2	CPH
D180-D183		AESQPY1112H	CHIP-LED	4	
D184-D189		AESQPY1112H	CHIP-LED	6	(T694SF)
IC1		MN101C54CFS	L.S.I.	1	(T694SF)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
IC1		MN101C589EN	L.S.I.	1	(T664SF, T654SF, T644SF)
IC480		AEICUPC358G2	IC	1	
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182, Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	2	
Q223		AESC23JKE	CHIP DIGI-TRANSISTOR	1	CPH
Q221, Q227		2SA1037AK	CHIP DIGI-TRANSISTOR	2	(T694SF)
Q10, Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	3	
R182, R183		AERJ06J101R	CHIP RESISTOR	2	100Ω, 1/10W, 5% (T694SF)
R490, R492		AERJ06J103R	CHIP RESISTOR	2	10K, 1/10W, 5%
R224, R225		AERJ06J103R	CHIP RESISTOR	2	10K, 1/10W, 5% (T694SF)
R226		AERJ06J103R	CHIP RESISTOR	1	10K, 1/10W, 5% (T664SF, T654SF, T644SF)
R221, R228, R342, R343		AERJ06J104R	CHIP RESISTOR	4	100K, 1/10W, 5%
R230		AERJ06J104R	CHIP RESISTOR	1	100K, 1/10W, 5% (T694SF)
R483, R484, R489		AERJ06J105R	CHIP RESISTOR	3	1M, 1/10W, 5%
R485		AERJ06J154R	CHIP RESISTOR	1	150K, 1/10W, 5%
R13		AERJ06J154R	CHIP RESISTOR	1	150K, 1/10W, 5% (T694SF)
R488, R491		AERJ06J202R	CHIP RESISTOR	2	2K, 1/10W, 5%
R181, R320		AERJ06J220R	CHIP RESISTOR	2	22Ω, 1/10W, 5%
R220, R222, R223		AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/10W, 5%
R226, R360		AERJ06J222R	CHIP RESISTOR	2	2.2K, 1/10W, 5% (T694SF)
R310		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/10W, 5%
R330		AERJ06J333R	CHIP RESISTOR	1	33K, 1/10W, 5%
R181		AERJ06J360R	CHIP RESISTOR	1	36Ω, 1/10W, 5% (T664SF, T654SF, T644SF)
R229		AERJ06J363R	CHIP RESISTOR	1	36K, 1/10W, 5% (T694SF)
R487		AERJ06J433R	CHIP RESISTOR	1	43K, 1/10W, 5%
R331, R341, R441		AERJ06J471R	CHIP RESISTOR	3	470Ω, 1/10W, 5%
R227, R496		AERJ06J471R	CHIP RESISTOR	2	470Ω, 1/10W, 5% (T694SF)
R480, R481		AERJ06J472R	CHIP RESISTOR	2	4.7K, 1/10W, 5%
R360		AERJ06J472R	CHIP RESISTOR	1	4.7K, 1/10W, 5% (T664SF, T654SF, T644SF)
R340		AERJ06J473R	CHIP RESISTOR	1	47K, 1/10W, 5%
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/10W, 5%
R486		AERJ06J684R	CHIP RESISTOR	1	680K, 1/10W, 5%
R10, R11, R311		AERDS2TJ102T	CARBON RESISTOR	3	1K, 1/4W, 5%
R12, R180		AERDS2TJ103T	CARBON RESISTOR	2	10K, 1/4W, 5%
R290		AERDS2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 6%
VZ340		AEVNNV6TL103	VARISTOR	1	10KΩVR
RY1		AEGG5G1A18	POWER RELAY	1	
RY2		AEBLD118	POWER RELAY	1	(T694SF)
T10		AETP284U0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	
SW1-SW4, SW6-SW9, SW11, SW16, SW17, SW19-SW30		EVQ11L05R	SWITCH	23	(T694SF)

01/04
S-6K1, S-6K3
S-6K4, S-6K5
S-6K8, S-6K9
S-6L0, S-6L1
S-6L2, S-6L3
S-6L4, S-6L5
S-6L6, S-6L7
S-6L8, S-6M0
S-6M1, S-6Q5
Printed in China

ORDER NO. SIMMC 0001002C1
E1

Service Manual

Microwave Oven

MODELS	APH	CPH
	USA	Canada
NN-S560BF/WF	O	O
NN-S550BF/WF	O	O
NN-S540BF/WF	O	
NN-L530BF	O	
NN-L530WF	O	O
NN-L520WF		O
NN-S510WF		O

* **RPH Model refer to the last page.**

Specifications for APH :

Specifications: / Model:	NN-S560BF/WF	NN-S550BF/WF	NN-S540BF/WF	NN-L530BF/WF
Power Source:	*120V AC Single Phase, 60Hz			
Power Requirement:	1370W	1370W	1370W	1370W
Output(IEC705-88):	1300W	1300W	1100W	1000W
Microwave Frequency:	*2450MHz			
Timer:	*99min.99sec			
Outside Dimensions:	*20 ”(518mm)(W)◦ × 16 ”(407mm)(D)◦ × 11”(301mm)(H)			
Oven Cavity Dimensions:	*14 ”(375mm)(W)◦ × 15 ”(386mm)(D)◦ × 8 ”(225mm)(H)			
Weight:	*26.5 lbs. (12.0kg)			
Output power:IEC705-88 Test Procedure				
Specifications subject to change without notice.				

Specifications for CPH:

Specifications: / Model:	NN-S560BF/WF	NN-S540BF/WF	NN-L530WF	NN-L520WF	NN-S510WF
Power Source:	*120V AC Single Phase, 60Hz				
Power Requirement:	1370W	1370W	1370W	1370W	1370W
Output(IEC705-88):	1200W	1100W	1100W	1100W	1000W
Microwave Frequency:	*2450MHz				
Timer:	*99min.99sec				
Outside Dimensions:	*20 ”(518mm)(W)◦ × 16 ”(407mm)(D)◦ × 11”(301mm)(H)				
Oven Cavity Dimensions:	*14 ”(375mm)(W)◦ × 15 ”(386mm)(D)◦ × 8 ”(225mm)(H)				
Weight:	*26.5 lbs. (12.0kg)				
Output power:IEC705-88 Test Procedure					
Specifications subject to change without notice.					

Panasonic®

© 2000 Shanghai Matsushita Microwave Oven Co.,Ltd
All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CONTENTS

	(Page)		(Page)
FEATURE CHART	3	DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE	13
CONTROL PANEL	3	COMPONENT TEST PROCEDURE	16
OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE	5	MEASUREMENTS AND ADJUSTMENTS	18
SCHEMATIC DIAGRAMS	7	PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE	19
DESCRIPTION OF OPERATING SEQUENCE	9	TROUBLESHOOTING GUIDE	20
CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING	11	EXPLODED VIEW AND PARTS LIST	24
		SCHEMATIC DIAGRAM & PARTS LIST OF DIGITAL PROGRAMMER CIRCUIT	25

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. **NEW HV**

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink is energized with very high voltages and high heat energy.**
3. **Very high voltage may remain in circuitry even when oven is off. High voltage may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage may remain in circuit.**

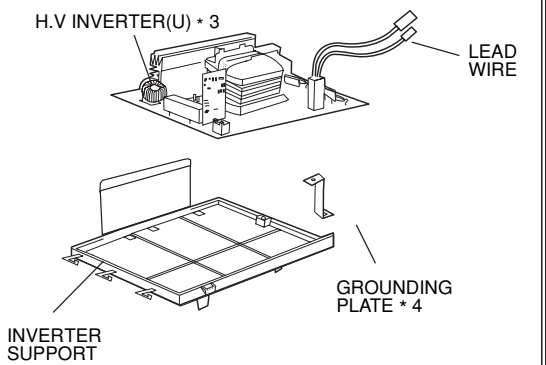
* 2. **Do not touch aluminum heat sink because it is very hot in high voltage and also very hot in high heat energy.**

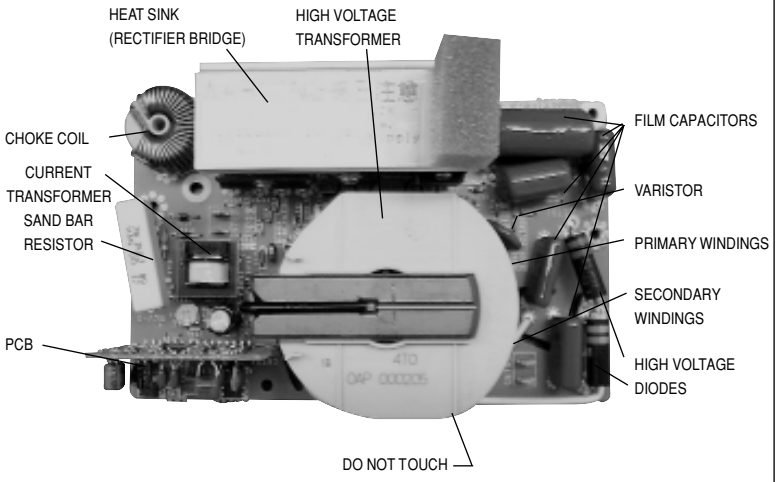
* 3. **Do not try to adjust or tamper with preset volume on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

* 5. **For USA only:**
   Do not try to repair Inverter PCB because it is very dangerous to repair it. Replace as whole High Voltage Inverter Circuit unit and return fully re-packed with original shipping box and shipping materials.

INVERTER POWER SUPPLY DIAGRAM



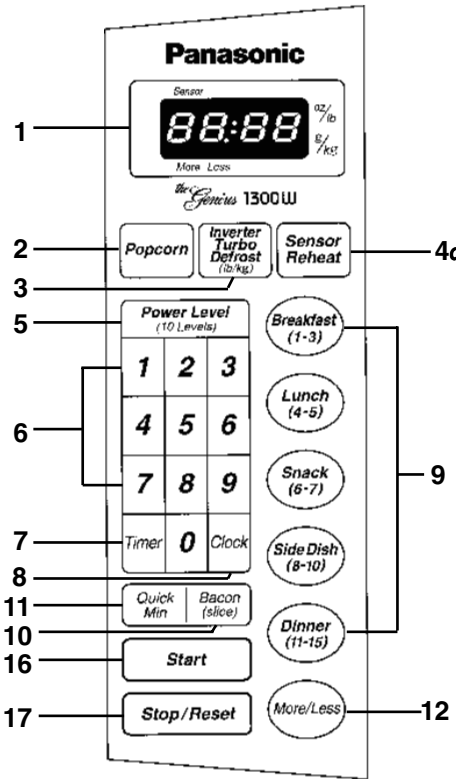


FEATURE CHART

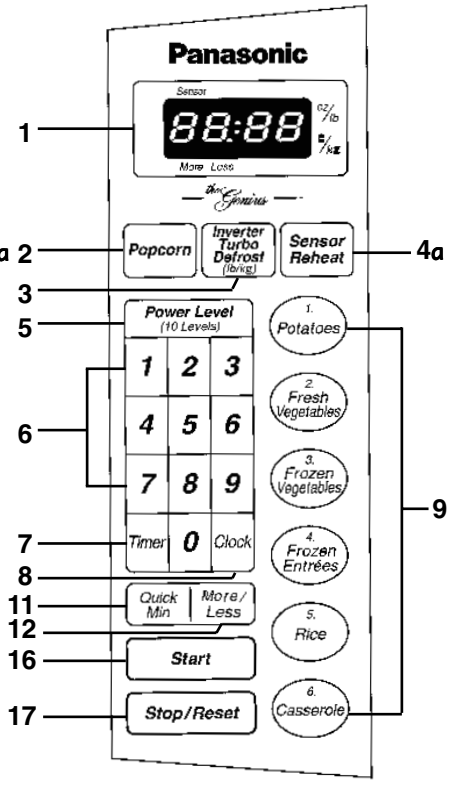
FEATURE \ MODEL	NN-S560WF	NN-S550WF NN-S540WF NN-S510WF NN-S530WF NN-S520WF
Three Stage Cooking	○	○
Inverter Turbo Defrost	○	○
Auto Reheat	—	○
Inverter Auto Cook	—	○
Sensor Reheat	○	—
Sensor Cook	○	—
Quick Min	○	○
Popcorn	○	○
Timer	○	○
Digital Clock	○	○

CONTROL PANEL

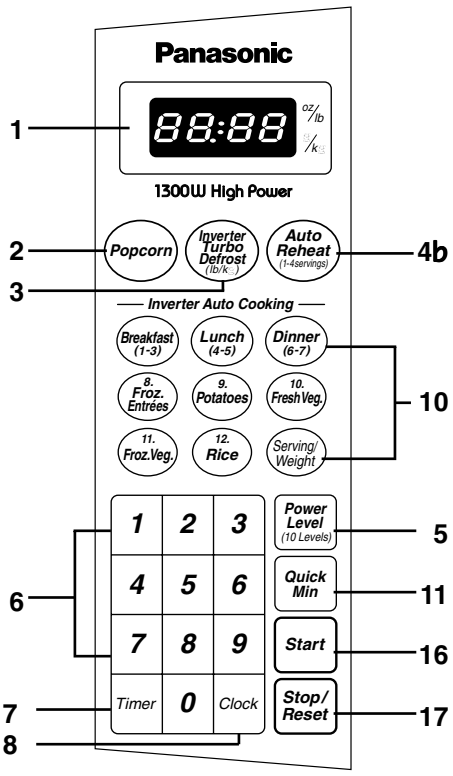
NN-S560(APH)



NN-S560(CPH)

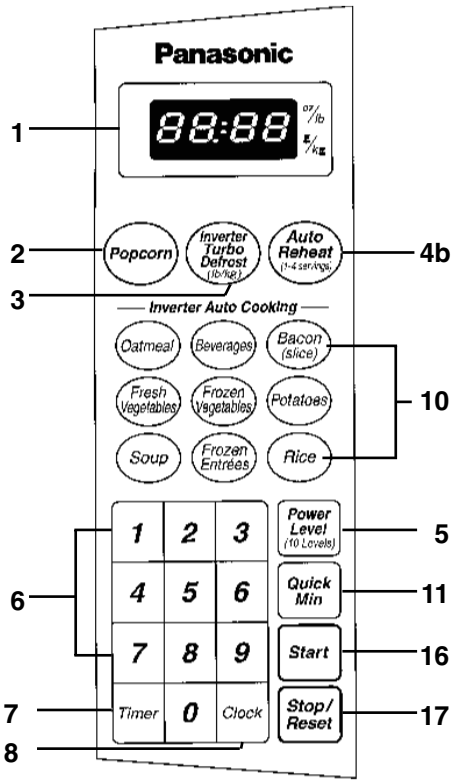


NN-S550

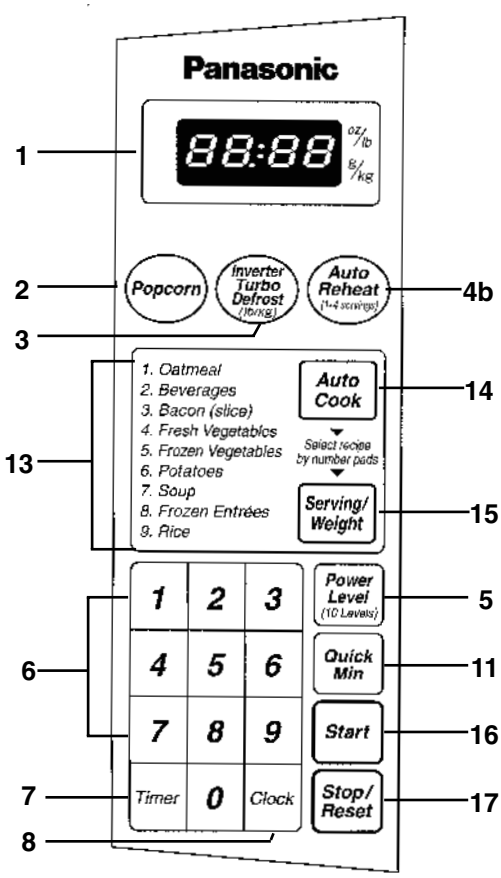


CONTROL PANEL

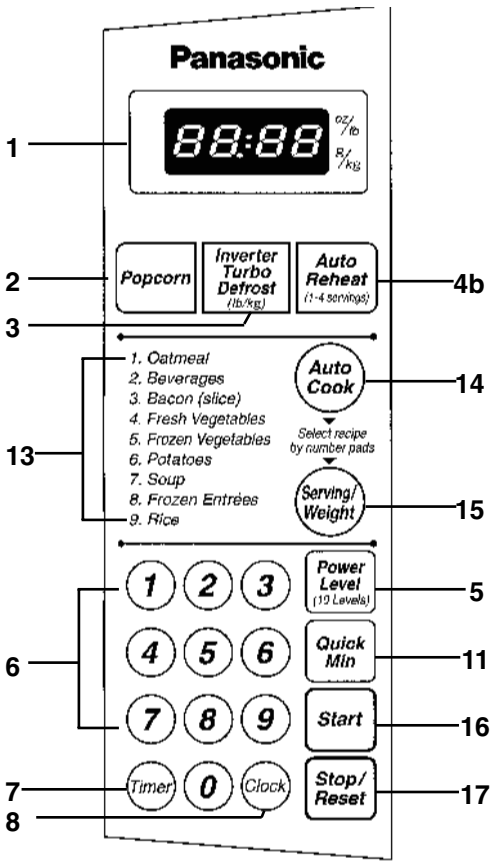
NN-S540



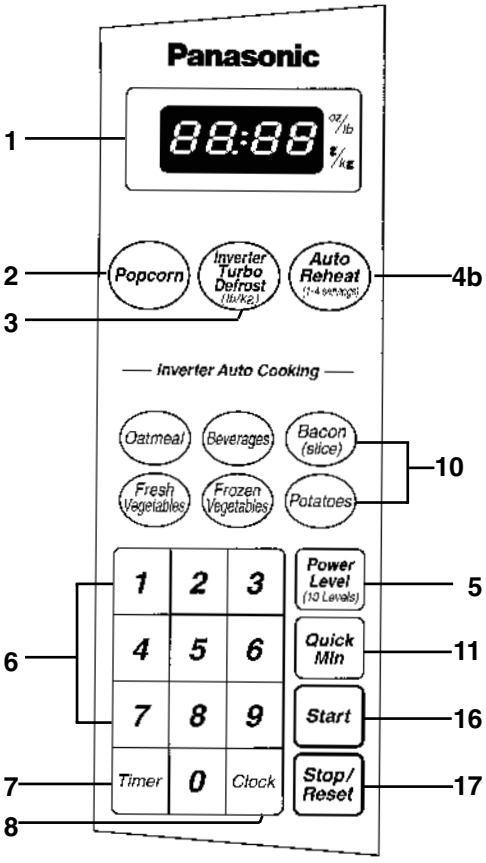
NN-L530



NN-L520



MN-S510



(1) Display Windows
(2) Popcorn Pad
(3) Inverter Turbo Defrost Pad
(4a) Sensor Reheat Pad
(4b) Auto Reheat Pad
(5) Power Level Pad
(6) Number Pads
(7) Timer Pad
(8) Clock Pad
(9) Sensor Cook Pad
(10) Inverter Auto Cooking Pads
(11) Quick Min Pad
(12) More /Less Pad
(13) Cooking Guide
(14) Auto Cook Pad
(15) Serving/Weight Pad
(16) Start Pad

One tap allows oven to begin functioning. If door is opened or STOP/RESET Pad is pressed once during oven operation, START Pad must again be pressed to restart oven.

(17) Stop/Reset Pad

Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day or colon appears on the display window.

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

When you pluge the power supply cord into the wall outlet, microwave oven automatically enter into the state of lb / oz. If you want to use g / kg state, please press **Start** pad after pluging the power source.

1. To Set Clock

OPERATION	SCROLL DISPLAY
1. Plug the power supply cord into wall outlet.	88.88
2. Press **Clock** pad.	☼ ☼
3. Enter time of day (TOD) by pressing appropriate **Number** pads.	11☼25
4. Press **Clock** pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	11. 25

2. Time Cooking for Two Stage

OPERATION	SCROLL DISPLAY
1. Place a water load in the oven.	
2. Press **Power Level** pad once to set High power. (1st stage)	P 10
3. Set for 5 seconds by pressing **Number** pads. 5 sec.= **5**	. 5
4. Press **Power Level** pad 6 times to set Medium power. (2nd stage)	P 5
5. Set for 1 minute by pressing **Number** pads. 1 min.= **1** **0** **0**	1.00
6. Press **Start** pad.	. 5
7. When 1st stage cooking time has elapsed. Oven beeps twice and automatically switches to 2nd stage cooking.	1.00
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

3. Inverter Turbo Defrost

OPERATION	SCROLL DISPLAY
1. Press **Inverter Turbo Defrost** pad.	– ☼
2. Set the weight for 1 lb by pressing **Number** pads. 1 lb = **1** **0**	1.0 –
3. Press **Start** Pad.	4.23
4. Press **Stop/Reset** Pad twice. Oven shuts off.	Time of day or colon if set appears in the display.

4. Inverter Auto Cooking

OPERATION	SCROLL DISPLAY
1. Press **Rice** pad twice.	1
2. Press **Start** pad. Cooking begins as time counts down.	15.00
3. When cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appers in the display.

5. Auto Cook

OPERATION	SCROLL DISPLAY
1. Press **Auto Cook** pad.	
2. Press **Number** pads. (Press 3 to select Bacon)	3

OPERATION	SCROLL DISPLAY
3. Press **Serving / Weight** pad. (Select 4. 6. 10. 14 slices)	***4***
4. Press **Start** pad.	***4.10***
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Times of day or colon if set appears in the display.

6. Popcorn

OPERATION	SCROLL DISPLAY
1. Press **Popcom** pad five times for 3.5 oz serving. (Select 1.75. 2.65. 2.85. 3.0 or 3.5 oz)	***3.5***
2. Press **Start** pad. Cooking begin as times counts down.	***1.45***
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

7. Sensor Cooking (NN-S560WFAPH/CPH,S560BFAPH/CPH)

OPERATION	SCROLL DISPLAY
1. Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a beaker, place the beaker in the center of the oven. Press **Breakfast** pad twice.	***– 2***
2. Press **Start** pad.	
3.The steam sensor detects steam about 1.5 to 4 minutes after the start pad is pressed. Sensor cooking (T1) automatically switches to cooking time(T2). "Sensor" disappears with beep sounds and the remainder of cooking time appears in the display window. NOTE: Cooking time will vary depending on the water temperature, the shape of the beaker or the Power source Voltage.	
4.When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

8. Auto Reheat

OPERATION	SCROLL DISPLAY
1. Press **Auto Reheat** pad twice for two servings.	***2***
2. Press **Start** pad.Auto Reheat cycle begins time counts down.	***2.00***
3.When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

9. Power Level

Press Power Level	Power Level	Display Window
once	P 10 (HIGH)	P 10
twics	P 9	P 9
3 times	P 8	P 8
4 times	P 7 (MED. HIGH)	P 7
5 times	P 6 (MEDIUM)	P 6
6 times	P 5	P 5
7 times	P 4	P 4
8 times	P 3 (MEDIUM-LOW)	P 3
9 times	P 2	P 2
10 times	P 1 (LOW)	P 1

10. To set Child satety Lock

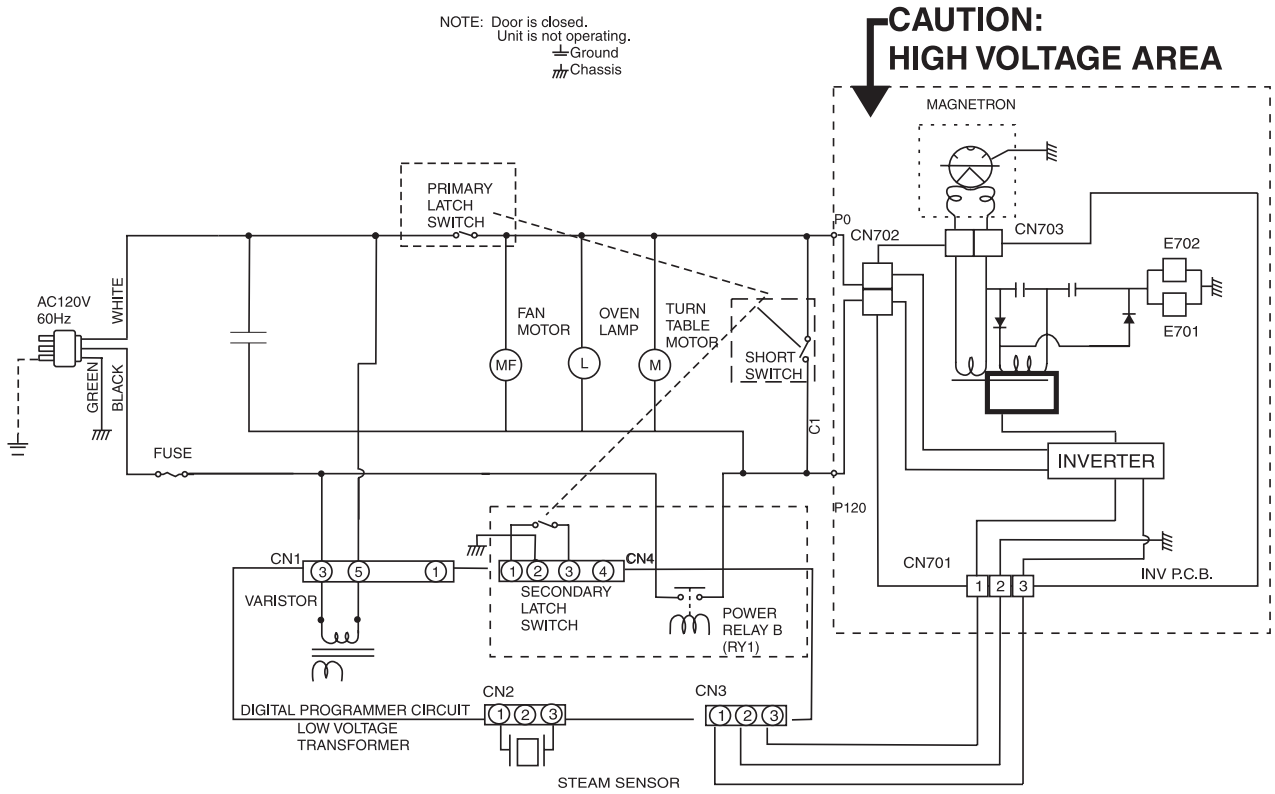
OPERATION	SCROLL DISPLAY
1. Press **Start** pad 3 times continuously. "Child" appears in the display.	***Child***

11. To Reset Child Lock

OPERATION	SCROLL DISPLAY
1. Press **Start / Reset** pad 3 times continuously.	Time of day or colon if set appears in the display.

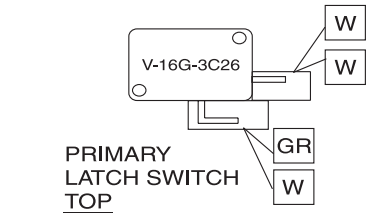
SCHEMATIC DIAGRAM (APH)

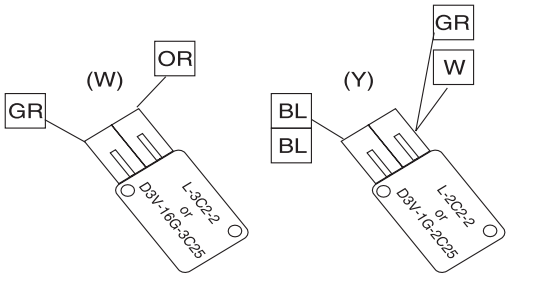
SCHEMATIC DIAGRAM (APH)

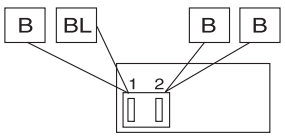


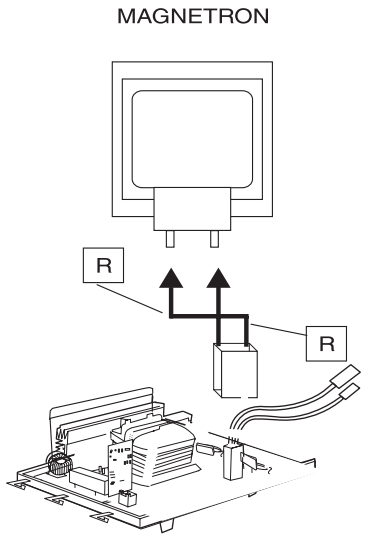
WIRING DIAGRAM (APH)

NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**





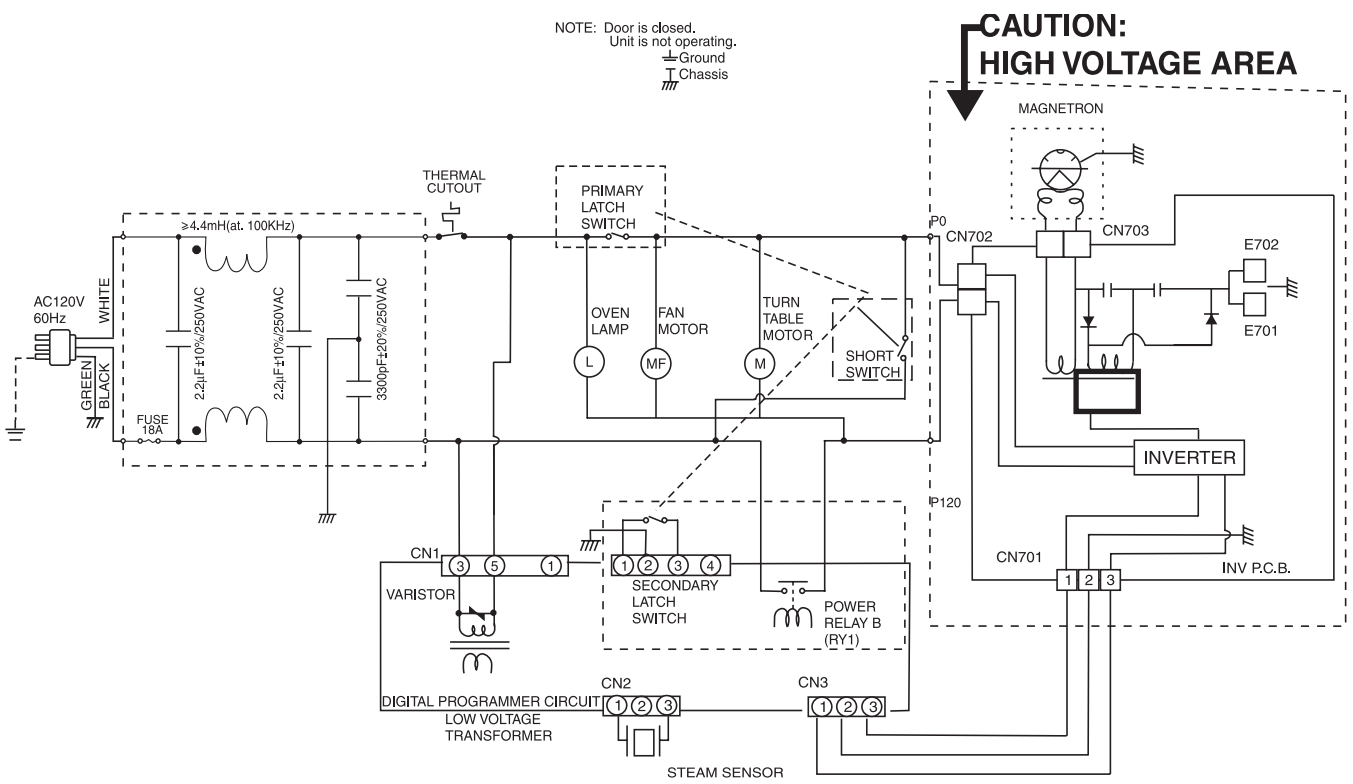




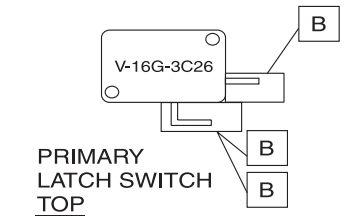
SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

SCHEMATIC DIAGRAM (CPH)

SCHEMATIC DIAGRAM (CPH)

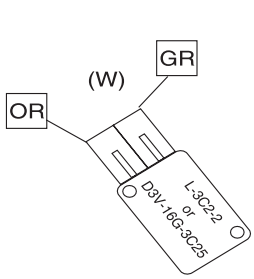


WIRING DIAGRAM (CPH)

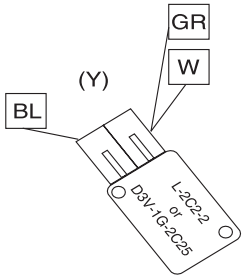


PRIMARY LATCH SWITCH TOP

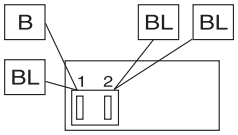
NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**

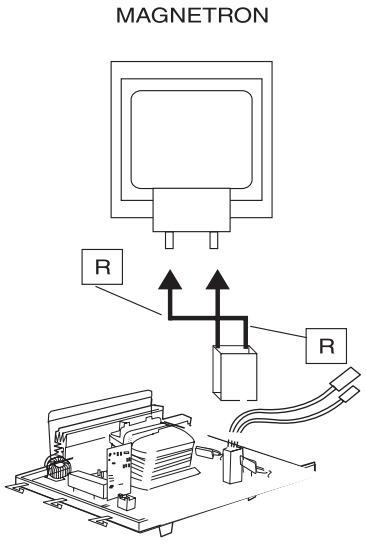


SECONDARY LATCH SWITCH BOTTOM (OUTSIDE)



SHORT LATCH SWITCH BOTTOM (INSIDE)





HIGH VOLTAGE INVERTER

SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

2. Inverter Power Supply Circuit NEW H,V

This Inverter Power Supply Circuit supplies 4,000V DC to the magnetron tube from the line voltage,120v 60Hz AC input. functions as the H.V. transformer, the H.V.capacitor and H.V.Diode.

1. The AC input voLtage 120V 60HZ is rectified to DC voltage immediately.
2. DC voltage will be supplied to the switching devices called IGBT. These devices will be switched ON-OFF by the 20 to 40 kHz PWM. (pulse width modulation) signal from the microcomputer in the DPC.
3. This drives the High voltage transformer to increase up to 2,000V AC and approximately 3V AC by means of transformer.
4. Then the half-wave doubler voltage rectifier circuit, consisting of the HV diodes and Capacitors, generates the necessary 4,000V DC needed for the magnetron.
5. Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter ciruit.
6. Then this signal will be fed back to the microcomputer in the DPC to determine operating conditions and output necessary to control PWM signal to the inverter Power Supply to control output power.

3. Inverter Turbo Defrost

When this Auto Control feature is selected and the Start Pad is tapped:

(A) The digital programer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.

(B) When cooking time the display window has elapsed, the oven tums off automatically by a control signal from the digital programmer circuit.

Variable Power Cooking

POWER SETTING		OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
			ON (SEC)	OFF (SEC)
HIGH	P10	100%	22	0
	P9	90%	22	0
	P8	80%	22	0
MEDIUM-HIGH	P7	70%	22	0
MEDIUM	P6	60%	22	0
	P5	50%	22	0
	P4	40%	22	0
MEDIUM-LOW	P3	30%	22	0
	P2	20%	15	7
	P1	10%	8	14
DEFROST	P3	30%	22	0

Inverter Turbo Defrost

SELECTED WEIGHT	COOKING TIME
1.0LB	4 min.28 sec.
6.0LB	25 min.00 sec.

4. Sensor Cooking (NN-S560BFAPH/CPH NN-S560WFAPH/CPH)

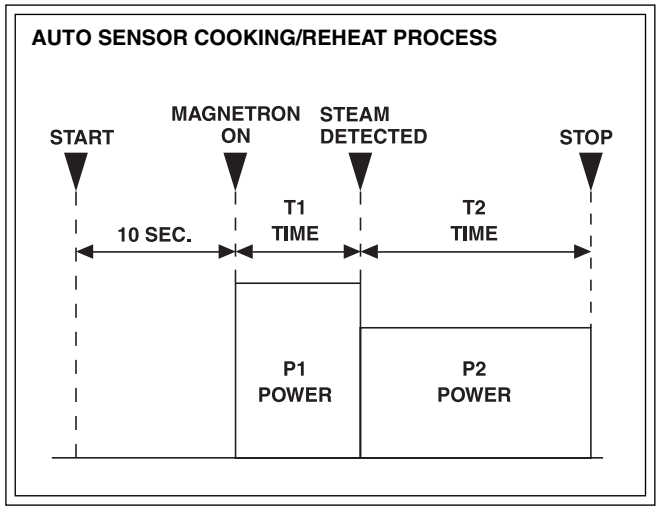
Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.

All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As the food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program Selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult variable Power Microwave cookbook for procedures.



Explanation of the Auto Sensor Cooking process

1) During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 second is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
2) T1 time... The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
3) T2 time... When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

   Balance of cooking time (T2 time)

   The balance of cooking time which is called T2 time, can be calculated by the following formula.

   T2 time (in sec.)=T1 time X K factor

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed Into the mIcroprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varles resulting In T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Frozen Vegetable:

T2 = T1 X K

=2 min. and 40 sec. X 0.1

=160 sec. X 0.1

=16 sec.

Sensor Cooking

Category	P1 Power	P2 Power	K Factor Standard
Frozen Vegetables	HIGH	LOW	0.1

5. Sensor Reheat (NN-S560BFAPH/CPH,NN-S560WF APH/CPH)

Auto Sensor Reheat is a quick and easy way to reheat refrigerator and room temperature foods.

Simply press the reheat pad. There is no need to select power level and cooking time.

NOTE: The Auto Sensor Reheat process is same as Auto Sensor Cooking process.

Sensor Reheat (All Sensor Modeis)

Category	P1 Power	P2 Power	K Factor Standard
Sensor Recheat	HIGH	LOW	0.1

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is inoperative, therefore, to make sure it is grounded properly before beginning repair work.

2. Inverter Warnings **NEW H.V.**

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

This High Voltage Inverter Power Supply circuit supplies very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however the current is extremely large and so danger exists because of its high current and high voltages.

The aluminum heat sink is also energized with high voltage (HOT), so do not touch when AC input terminal is connected to the power line because one of the IGBT switching power devices (Collector) is directly connected to the Aluminum heat sink.

The Aluminum heat sink may be HOT from heat energy; therefore, extreme care should be taken during servicing and replacing.

WARNING OF INVERTER POWER SUPPLY (U) GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. This High Voltage Inverter Power Supply circuit board must have a proper chassis ground by the grounding bracket to the chassis ground; otherwise, this H.V. Inverter circuit board will expose very high voltage and cause extreme DANGER! Be sure to have proper grounding by the grounding plate and screws.

WARNING OF DISCHARGING HIGH VOLTAGE CAPACITORS

Warning about the electric charge in the high voltage capacitors. For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the Inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please make sure to touch chassis ground side first then short to the output terminals.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the primary, and secondary windings, choke coil and heat sink of the Inverter. It is extremely dangerous to work on or near these circuits with oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

3. When parts must be replaced, remove the power plug from the outlet.

4.When the 18 Amp fuse is blown due to the operation of short switch:

WARNING

When the 18 Amp. fuse if blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (RY1) when the continuity check reads shorted contacts (1-2).

(A) This is mandatory. Refer to “Measurements and Adjustments” for these switches.

(B) When replacing the fuse, confirm that it has the appropriate rating for these models.

(C) When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

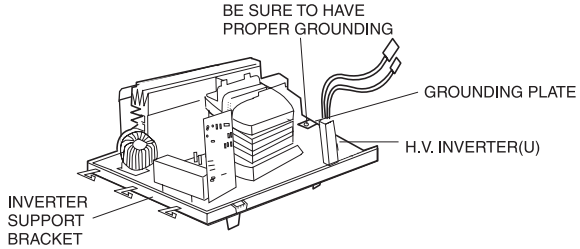
5.Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

MAGNETRON FILAMENT TERMINAL

INSULATED HANDLE SCREWDRIVER

Touch chassis side first then short to the terminal of the magnetron filament terminal.



6.Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.

(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

(C) Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)

CAUTION

MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE **NEW H.V.**

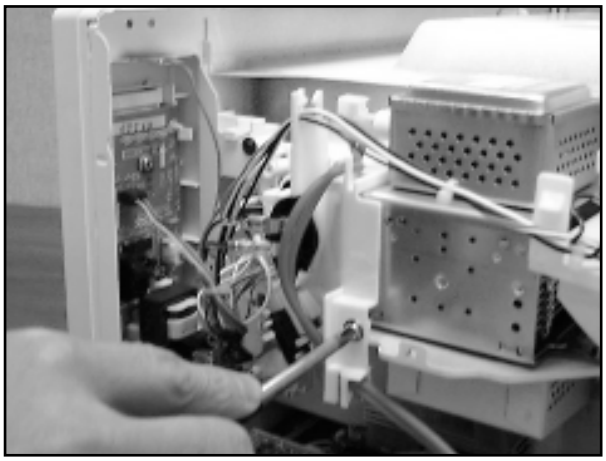
1. The following components have potentials above 250V while the appliance is operating..
   * Magnetron
   * High voltage transformer (Located on Inverter (U))
   * High voltage diodes (Located on Inverter (U))
   * High voltage capacitors (Located on Inverter (U))

   Pay special attention on these portions.
2. When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm^2. After repair or exchange, it is very important to check if magnetron and the door hinges are correctly fixed.

DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Magnetron

(A) Discharge the high voltage capacitors, as mentioned and shown on page 11.
(B) Remove 1 screw holding air guide c to magnetron.
(C) Disconnect 2 high voltage lead wires from magnetron filament terminals.
(D) Remove 4 screws holding the magnetron.
NOTE: After replacement of the magnetron, tighten mounting screws in an X pattern, properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

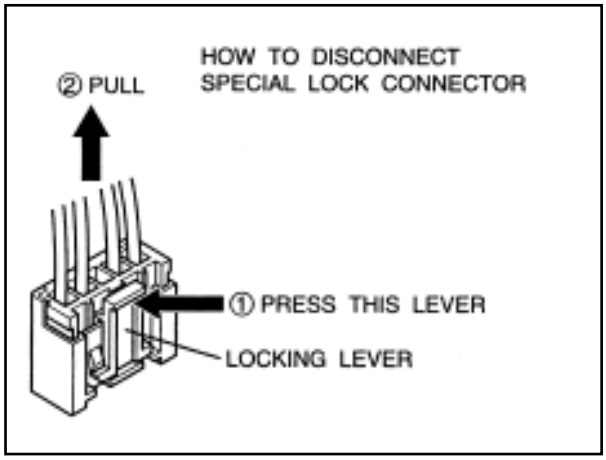


CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.

2. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Disconnect all connectors from D.P.C.
(B) Slide the escutcheon base upward slightly.
(C) Remove 1 screws holding DPC

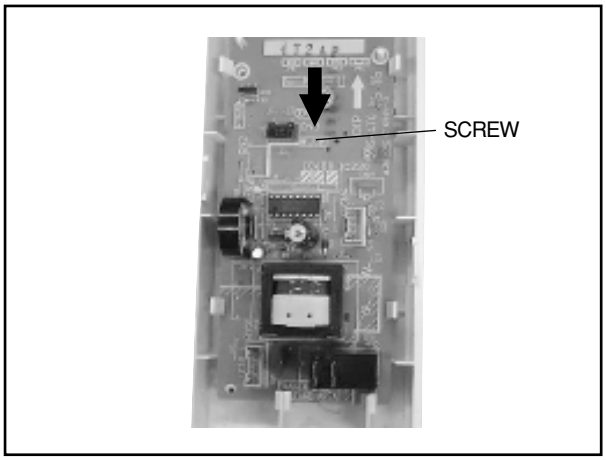


To replace membrane key board

(F) Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.
NOTE: 1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.
2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Alignment position of membrane key board is as follows;
Membrane key board: Right and upper edges
Escutcheon sheet: Right and upper edges

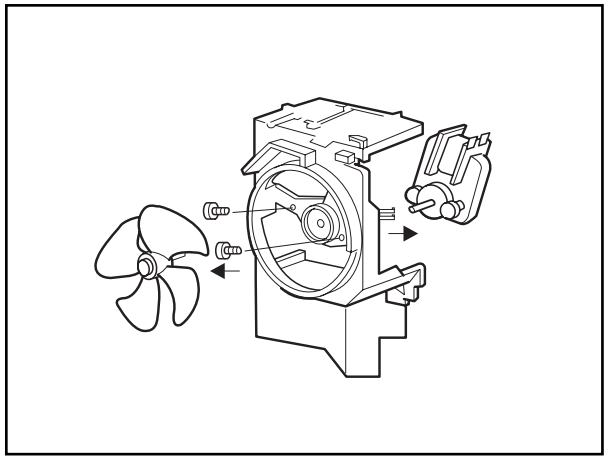
3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.
(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



4. Fan motor

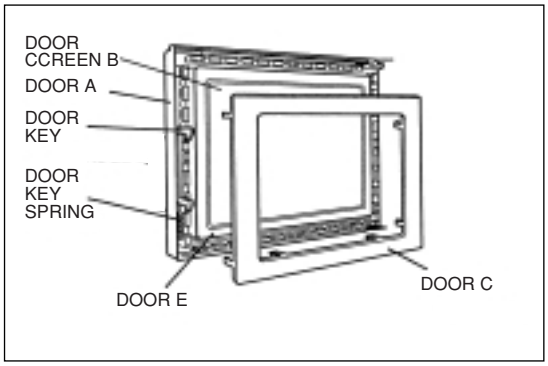
(A) Disconnect 2 lead wires from fan motor terminals.
(B) Remove 1 screw at located on oven attaching orifice assembly.
(C) Remove orifice assembly/Inverter power supply (U) from oven assembly. (Refer page 15)
(D) Remove fan blade from the fan motor shaft by pulling it straight out.
(E) Remove 2 screws holding fan motor to orifice.
(F) Separate the fan motor from the orifice assembly by freeing 2 catch hooks on the orifice assembly.



5. Door assembly

(A) Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
(B) Separate door E from tabs on door A and remove door A.
(C) Open Door E at the opening angle of approximately 10° (Note: The door cannot be removed if the opening angle is greater than 10°).
(D) Remove the door from its hinges by pushing the door's lower hinge pin upward and out.
(E) Remove door screen B from door A.
(F) Remove door key and door key spring.
(G) When reassembling door hold door E at the opening angle of approximately 10°.
(H) Place the door's lower hinge pin into the bottom hinge hole.
(I) Use your left index finger to support the door's lower hinge pin while guiding the door's upper hinge pin into the top hinge hole.
(J) Lower your finger to seat the door onto the hinges.
(K) Replace other components.
(L) **Door alignment is crucial. If door is misaligned, apply pressure until alignment is achieved.**

After replacement of the defective component parts of the door, reassemble, install, and perform microwave leakage test.



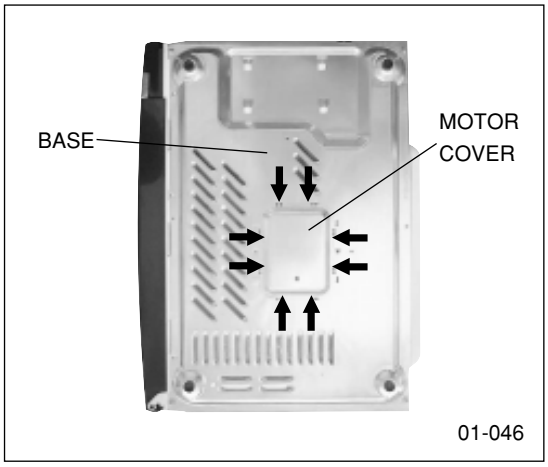
6. Turntable motor

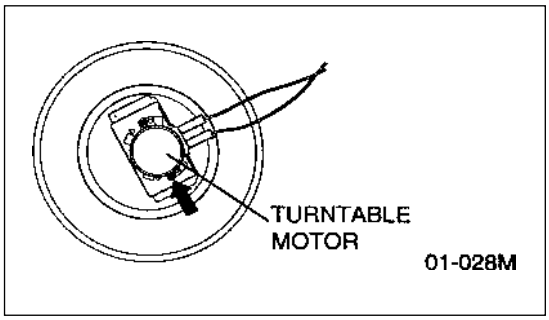
(A) Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like. (See Figure)

NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.

(B) Disconnect 2 lead wires connected to the turntable motor.
(C) Remove the turntable motor by removing 1 screw.

NOTE: After reinstalling the new turntable motor and reconnecting the two lead wires, reinstall the motor cover by rotating it around 180 , tucking the tabs under the base into the 2 provided slots, then screw the single tab to the base using a 4mm X 6mm screw (not provided).

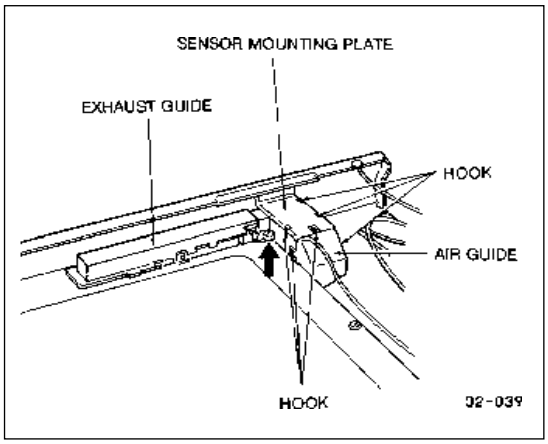


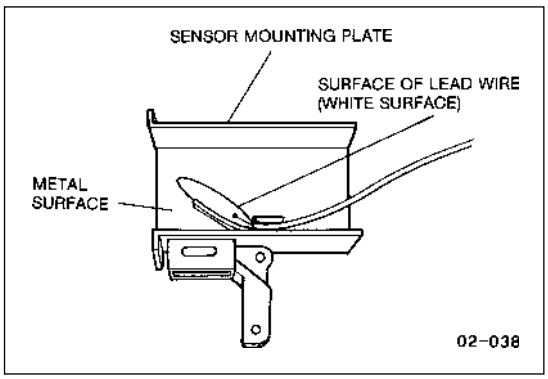


7. Steam Sensor

(A) Remove 1 screw holding steam sensor unit. (indicated by arrows)
(B) Disconnect CN2 connector from digital programmer circuit board.
(C) Remove exhaust guide from steam sensor unit.
(D) Remove catch hooks on sensor mounting plate and air guide.
(E) Remove steam sensor from sensor mounting plate.

NOTE: When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure.





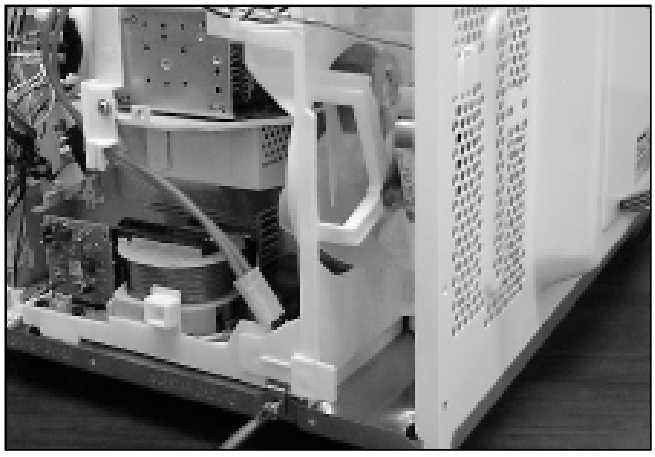
8. Inverter Power Supply (U)

CAUTIONS WHILE REPLACING INVERTER POWER SUPPLY (U)

1. Make sure to leave the grounding plate in its place.
2. Make sure to securely tighten grounding screw from the bottom of chasis (base).
3. Securely connect 3 lead wire connectors.
4. Make sure the heat sink has enough space (gap) from the oven. Take special care not to touch any lead wire to the aluminum heat sink because it is hot.

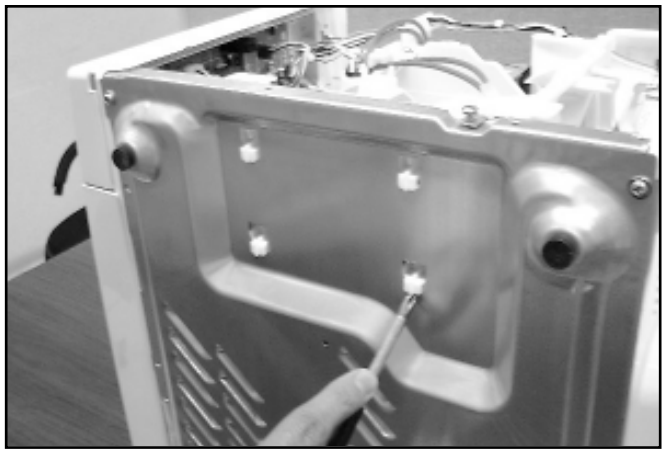
1. Take off outer panel.

2. Remove screw

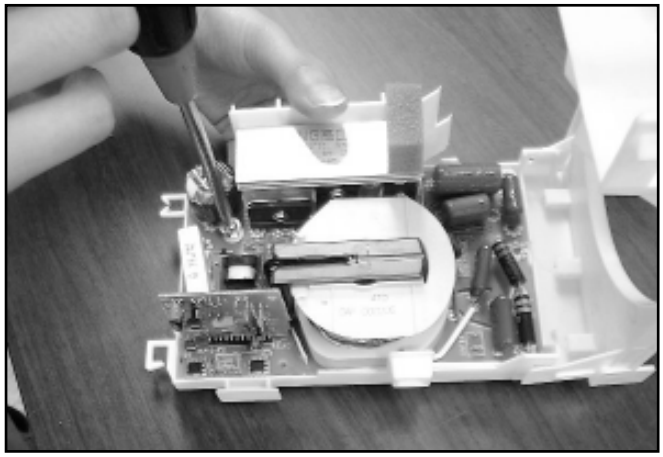


3. Remove screw
4. Disconnect all wires from inverter. Detach turntable wires from inverter bracket.

5. Remove screw and slide oriffice toward you, then lift up and out.



6. Slide four locking of oriffice at the bottom of the base slightly



7. Remove 2 screws holding inverter to inverter bracket.

8. Replace inverter and reassemble to inverter bracket A.
9. Retighten 2 screw
10. Slide and place assembly to the correct location of a completed unit.
11. Push Inverter Assembly until locking tabs are locked.
12. Retighten inverter screws and orifice screws.
13. Reconnet all wires to correct location and redress turntable wires.

COMPONENT TEST PROCEDURE

CAUTION NEW. H.V.

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay B) Interlocks.

(A) Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
(B) Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
(C) Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch Switch	0 Ω (close)	∞ Ω (open)
Secondary Latch Switch	0 Ω (close)	∞ Ω (open)
Power Relay B	∞ Ω (open)	∞ Ω (open)

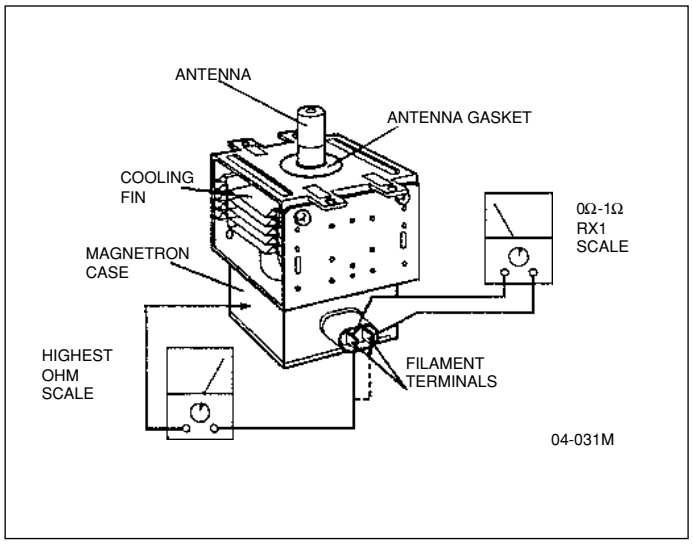
2. Short Switch & Monitor

(A) Unplug lead wires from Inverter Power Supply (U) primary terminals.
(B) Connect test probes of ohm meter to the disconnected leads which were connected to Inverter Power Supply (U).
(C) Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω	∞ Ω

3. Magnetron

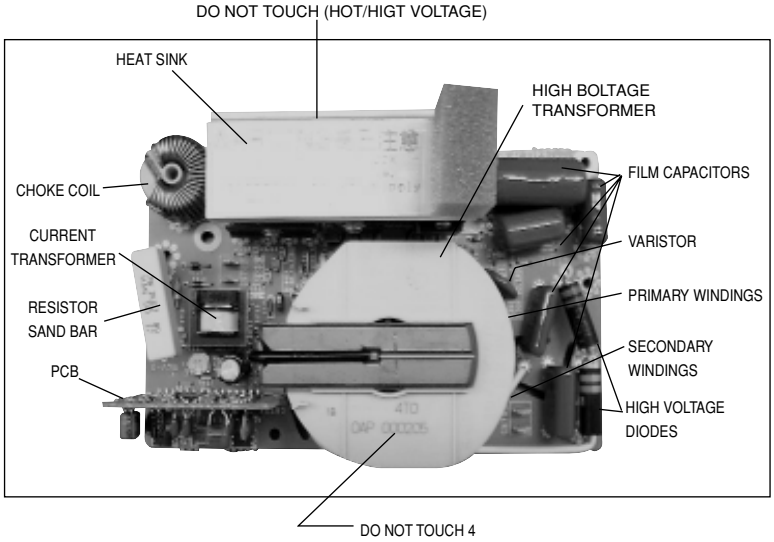
Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.



4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

5. Inverter Power Supply (U)for USA only
DO NOT try to REPAIR this H.V. Inverter power supply (U).Replace as whole H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H97 or H98 appears by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test 1

A. Program DPC.
   1. Tap Clock
   2. Tap TIMER
   3. Tap START
   4. Tap POWER LEVEL
B. Place 1 liter of water load into oven cavity.
C. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.
D. Program oven at High power for 1 minute and press start.
   1. After approximately 15 seconds, oven displays H98 and stops oven.
   2. During oven operation, input current is approximately 1.0 to 1.7A. If both 1 and 2 are OK, please proceed to test 2.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	1.0 to 1.7A	H98

.

Test 2.

Continued from Test 1
A. Unplug 3 pin connector, CN701
B. Set oven at High power for 1 minute and start.
   1. After approximately 27 seconds, oven displays H97 and stops oven.
   2. During oven operation, input current is approximately 0.4 to 0.8A

	INPUT AMPERE	FAILURE CODE
Unplug CN701	0.4 to 0.8A	H97

If both 1 and 2 are OK, the Inverter Power Supply (U) can be determined OK.

6. Steam Sensor and Digital Programmer Circuit

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.

1) Place a water load (150 cc) in the oven.
2) Tap Sensor Reheat pad.
3) Tap Start Pad.
4) Steam Sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped.
5) T1 time cooking automatically switches to remaining time cooking (T2).
6) The remaining cooking time (T2) appears in display window. If the following cooking time appears, Steam Sensor function is normal.

T1 TIME	T2 TIME (Remaining cooking time)
1 Min. 30 Sec.~4 Min.	8 Sec.~23 Sec.

MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts(For touch models Part No. ANE6142-1450,Type No. V-16G-3C26-M for Primary latch switch; Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch; Part No. A61785180AP, Type No. L-2C2-2 for short switch and Part. No. AEG5J1EG12B/AEG5J1EG18B, Type No. G5J-1-TP for power relay B(RY1))
* When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B. Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement－In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

1. Adjustment of Primary latch switch, Secondary latch switch and Short switch.

(A) When mounting Primary latch switch,Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.

NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

NOTE: Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

(A) Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the beaker's temperature. (recorded as T1).

(B) Place the beaker on the center of glass cook plate. Set the oven for High power and heat it for exactly one minute.

(C) Stir the water again and read the temperature of the beaker. (recorded as T2).

(D) The normal temperature rise at High power position for each model is as shown in table.

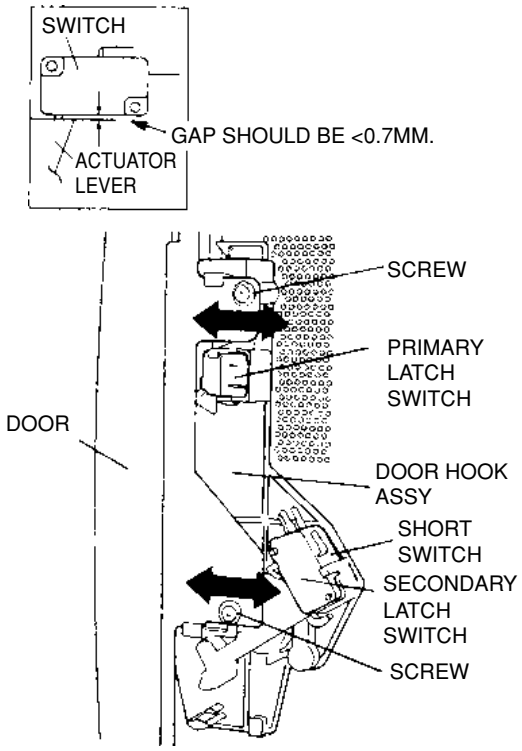


TABLE (1L-1min. test)

RATED OUTPUT	TEMPERATURE RISE
1000~1100W(IEC705-88)	Min. 16.2°F(9°C)
1200~1300W(IEC705-88)	Min. 17.6°F(9.5°C)

PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE: The U.S. Government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

1. Equipment

*Electromagnatic radiation monitor
*Glass thermometer 212 °F or 100 °C
*600cc glass beaker

2. Procedure for measuring radiation leakage

Note before measuring.

(1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.

(2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).

(3) Leakage with the outer panel removed ..... less than 5mW/cm² .

(4) Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm² (1mW/cm² for Canada).

(5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm² .

(A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20° ± 5 °C (68° ± 9 °F) water in a beaker which is graduated to 600cc, and place in the center of the oven.

(B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.

(C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.

(D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

(1) Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measur ing around the magnetron.

WARNING

Avoid contacting any high voltage parts.

(2) Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3. Record keeping and notification after measurement

(A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

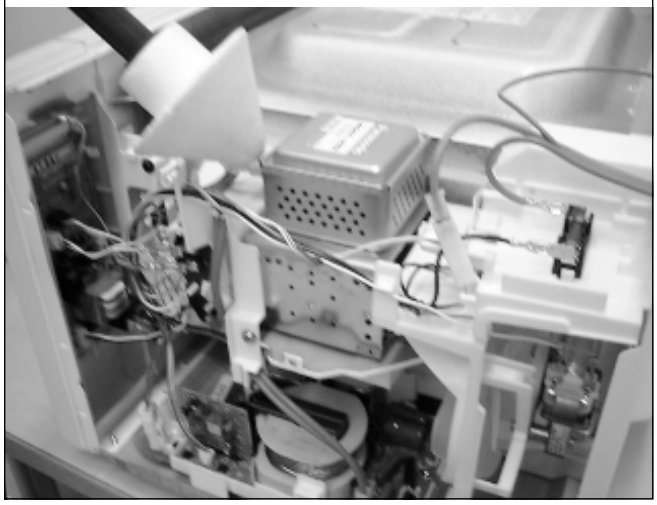
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

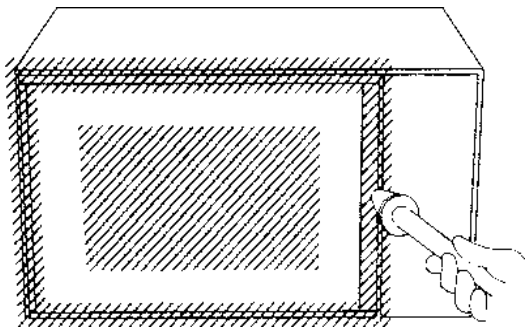
(B) Should the radiation leakage be more than 2 mW/cm² (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.





01-035

MOVE PROBE ALONG SHADED AREA(////)AROUND EXHAUST OPENINGS(as shown)AND AROUND AIR INLET OPENING

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer,disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be damaged or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 120V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

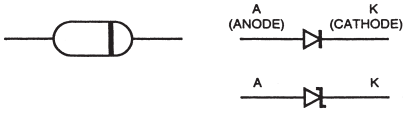
First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout (Cavity) 3. Open low voltage transformer 4. Defective DPC	Check fan motor when thermal cutout is defective.
2.	No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switdh (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U) (Page 18)	Check adjustment of primary, secondary latch switch and short switch including door.
		NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay (RY1)'s contacts (between 1 and 2) and if it has continuity, replace power relay B (RY-1)'s.	
3.	Oven does not accept key input(Program)	1. Key input is not insequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Fan motor turn on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch	Adjust door and latch switches.
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or be intermittent. 3. Defective high voltage component HV Inverter Power Supply (u) Magnetron 4. Open or loose wiring of power relay B (RY-1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY-1)	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting Adjust door and latch switches.
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	

7.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check tighten screws on escutcheon base bracket, D.P.C. board.
8.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
9.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
10.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2.Operation of thermal cutout	Adjust door and latch switches.
11.	Oven returns to plugged in mode after 10 seconds elapses on the Auto sensor cooking mode.	1.Open or loose wiring of sensor terminal from DPC 2.Open steam sensor 3.Defective DPC	

HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



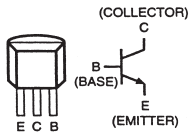
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC·····

2SD·····

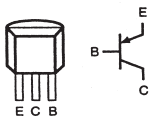


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

2SA·····

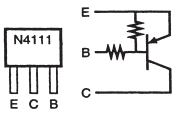
2SB·····



	FORWARD	REVERSE
B-E	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor

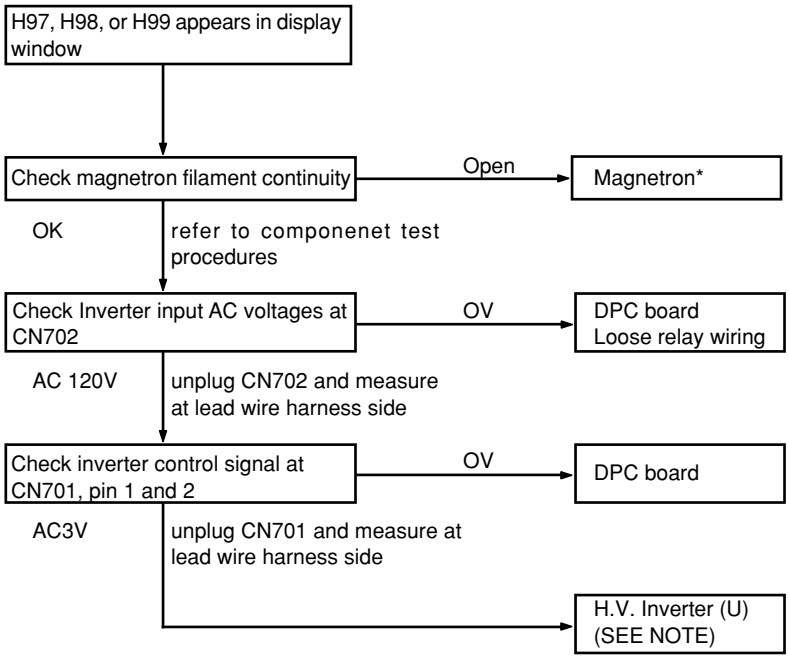
PNP Transistor



	FORWARD	REVERSE
E-B	10kΩ～30kΩ	10kΩ～30kΩ
C-B	50kΩ～90kΩ	∞
C-E	40kΩ～80kΩ	∞

Troubleshooting of Inverter Circuit (U) and Magnetron NEW H.V.

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97, H98, and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97, H98, and H99. First, you must program the DPC by pressing Clock, Time, Start, Power Level. Program unit for operation. H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.



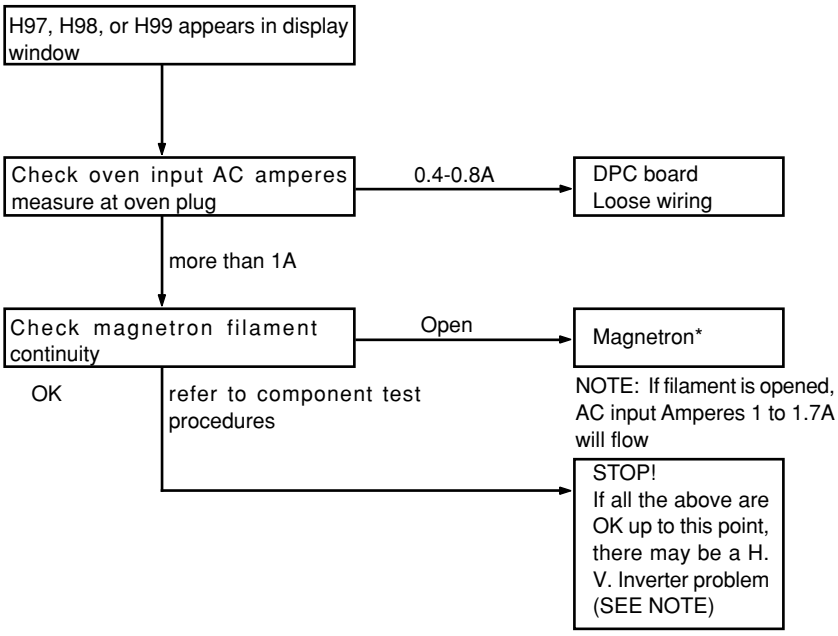
NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Alternate way to troubleshoot oven with AC Ampere meter used

H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting


H97, H98, or H99 appears in display window
Check oven input AC amperes measure at oven plug
0.4-0.8A
DPC board
Loose wiring
more than 1A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, AC input Amperes 1 to 1.7A will flow
STOP!
If all the above are OK up to this point, there may be a H. V. Inverter problem (SEE NOTE)

NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT

RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Trouble Related to Digital Programmer Circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal Open (NOTE)	STEP 2 Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V Normal	LVT → Step 3
	3	IC-1 pin 8 voltage (Emitter of Q10)	Abnormal Normal = 5V	ZD10, Q10 → Step 4
	4	IC-1 pin 10 voltage (15 pin of IC-220)	Abnormal Normal	IC-220 → IC-1, CX320

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove the jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove the jumper wire (PF3).

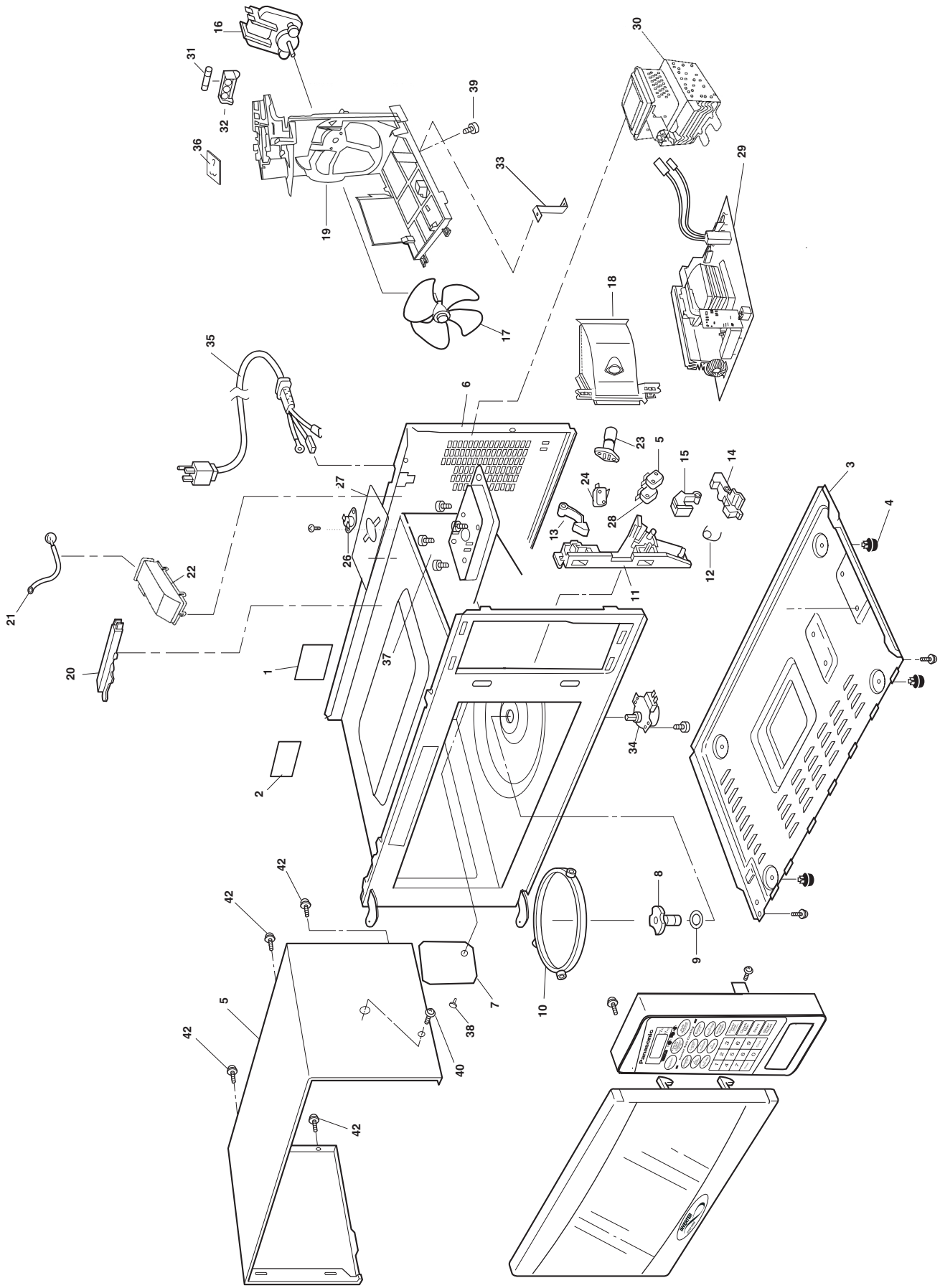
(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 31 voltage	Abnormal	IC-1
			Normal	BZ, IC-220
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 32 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-220	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting	1	IC-1 pin 38 and pin 39 voltages while operation at high power	Abnormal	IC-1
			Normal 5---5V, 15---5V	→ Step 2
	2	Q220 transistor	Abnormal	Q220
			Normal	IC-220, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V.	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch Switch 2. DPC/Power Relay
			AC line voltage of 120V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	DPC
			Approx. AC 3V	Magnetron

TO BE CONTINUED FOR SENSOR MODELS				
Auto sensor cooking does not operate normally. (Steam Sensor cooking does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20k Ω/V), when breathe on metal surface of sensor	Abnormal = 0V	Steam sensor
			Normal > 10~30mV	IC-1

EXPLODED VIEW AND PARTS LIST



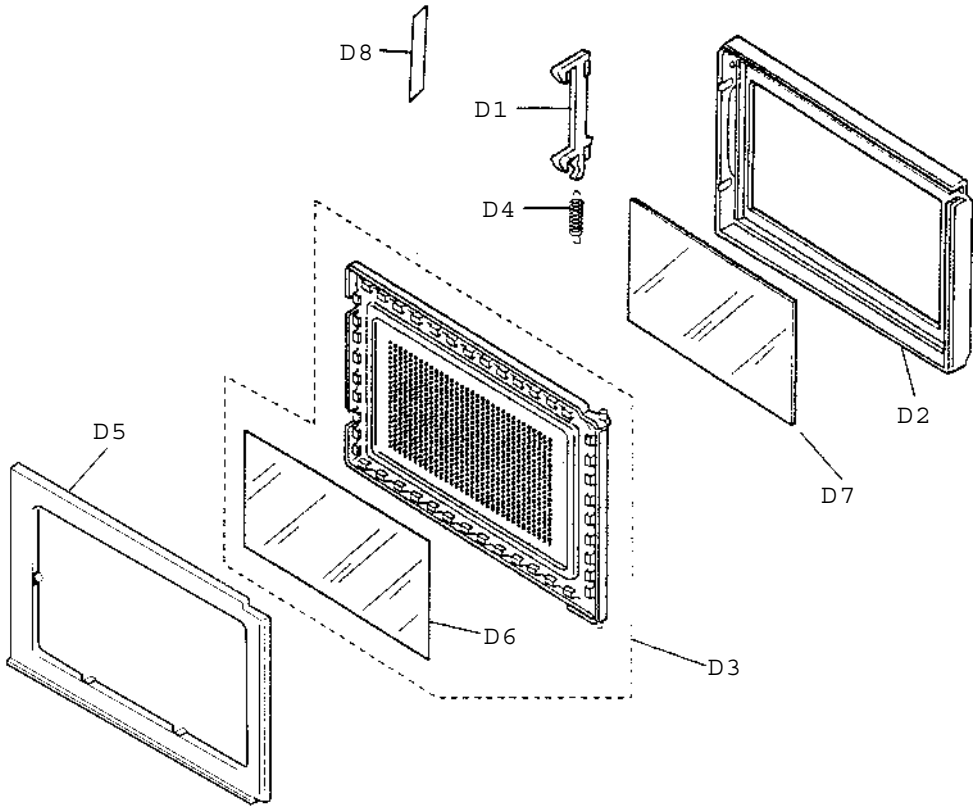
PARTS LIST

NOTE 1: When ordering replacement part(s), please use part number(s) shown in this part list.
Do not use description of the part.
2: Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
1		F00069660AP	CAUTION LABEL	1	******APH
1		F00067600CP	CAUTION LABEL	1	******CPH
2		F00074T00BAP	NAME PLATE	1	S560BFAPH
2		F00074T00HAP	NAME PLATE	1	S560WFAPH
2		F00074T00BCP	NAME PLATE	1	S560BFCPH
2		F00074T00HCP	NAME PLATE	1	S560WFCPH
2		F00074T10BAP	NAME PLATE	1	S550BFAPH
2		F00074T10HAP	NAME PLATE	1	S550WFAPH
2		F00074T20BAP	NAME PLATE	1	S540BFAPH
2		F00074T20HAP	NAME PLATE	1	S540WFAPH
2		F00074T20BCP	NAME PLATE	1	S540BFCPH
2		F00074T20HCP	NAME PLATE	1	S540WFCPH
2		F00074T30BAP	NAME PLATE	1	L530BFAPH
2		F00074T30HAP	NAME PLATE	1	L530WFAPH
2		F00074T30HCP	NAME PLATE	1	L530WFCPH
2		F00074T40HCP	NAME PLATE	1	L520WFCPH
2		F00074T50HCP	NAME PLATE	1	S510WFCPH
3		F10014T00AP	BASE	1	
4		F10084T00AP	RUBBER FOOT	4	
5		F110D4T00BAP	CABINET BODY (U)	1	****BF*PH
5		F110D4T00HAP	CABINET BODY (U)	1	****WF*PH
6	⚠	F201A4T00AP	OVEN (U)	1	S560*F*PH
6	⚠	F201A4T10AP	OVEN (U)	1	EXCEPT S560*F*PH
7		F20554T00AP	COVER	1	
8		F21314T00AP	PULLY SHAFT	1	
9		ANE2177-F80	WASHER	1	
10		B290D9330AP	ROLLER RING (U)	1	
11	⚠	B3020-1480	DOOR HOOK	1	
12		J3097-1480	LATCH SPRING	1	
13		B3136-1480	HOOK LEVER A	1	
14		B3137-1480	HOOK LEVER B	1	
15		B3138-1480	HOOK LEVER C	1	

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
16		F400A4T00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
17		F40084T00AP	FAN BLADE	1	
18		F40254T00AP	AIR GUIDE A	1	
19		F41444T00AP	ORIFICE	1	
20		F64505540AP	EXHAUST GUIDE B	1	S560*F*PH
21		A707S4T00AP	STEAM SENSOR	1	S560*F*PH
22		F65434T00AP	SENSOR BRACKET C	1	S560*F*PH
23		F612E9660AP	INCANDESCENT LAMP(U)	1	125V, 60Hz, 20W
24	⚠	ANE6142-1450	MICROSWITCH B	1	(V-16G-3C25L)
25	⚠	J61414T00AP	MICROSWITCH A	1	(D3V-16G-3C25)
26	⚠	F61454050AP	THERMAL CUTOUT	1	120°C, ******CPH
27		F66264T00CP	THERMAL CUTOUT MOUNT	1	******CPH
28	⚠	A61785180AP	MICROSWITCH C	1	(SHORT SWITCH) (D3V-1G-2C25)
29	⚠	A606Y4T00AP	H.V.INVERTER (U)	1	
30	⚠	2M261-M32F	MAGNETRON	1	S560*FAPH, S550*FAPH
30	⚠	2M261-M32G	MAGNETRON	1	S560*FCPH
30	⚠	2M258-M32F	MAGNETRON	1	S540*FAPH, L530*FAPH
30	⚠	2M258-M32G	MAGNETRON	1	S540*FCPG, L530WFCPH,L520WFCPH,S510WFCPH
31	⚠	B62308250AP	FUSE	1	18A/120V,60Hz
32		B62314000AP	FUSE HOLDER	1	******APH
33		F61844T00AP	GROUNDING PLATE	1	
34		B63264080AP	TURNTABLE MOTOR	1	
35	⚠	F900C9660AP	AC CORD W/PLUG	1	******APH
35	⚠	F900C9660CP	AC CORD W/PLUG	1	******CPH
36		A692Y4T00CP	NOISE FILTER (U)	1	******CPH
37		XTWANE+10RU	SCREW	4	FOR MAGNETRON
38		XST4+5VS	SCREW	1	FOR COVER
39		XYD4+EE12F	SCREW	1	FOR H.V.INVERTER EARTH
40		XTCA4+12AFK	SCREW	1	FOR CABINET BODY SIDE

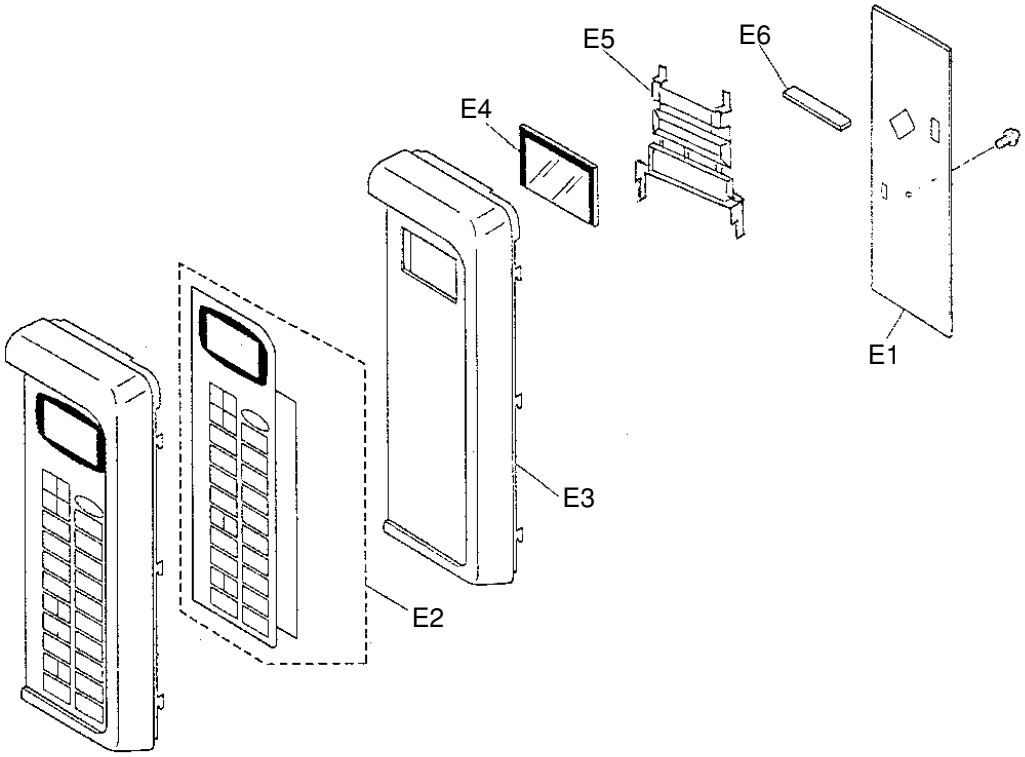
DOOR ASSEMBLY



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
D1		B3018-1480	DOOR KEY #A	1	
D2	⚠	F30014T00BAP	DOOR A	1	****BF*PH
D2	⚠	F30014T00HAP	DOOR A	1	****WF*PH
D3	⚠	F302K4T00AP	DOOR E (U)	1	
D4		B30214000AP	DOOR KEY SPRING	1	
D5	⚠	F30854T00AP	DOOR C	1	
D6	⚠	F31454T00AP	DOOR SCREEN A	1	
D7		F31464T00BAP	DOOR SCBEEN B	1	****BF*PH
D7		F31464T00HAP	DOOR SCREEN B	1	****WF*PH
D8		B02454180AP	DHHS LABEL	1	*****FAPH
D8		B04114180CP	CSA LABEL	1	*****FCPH

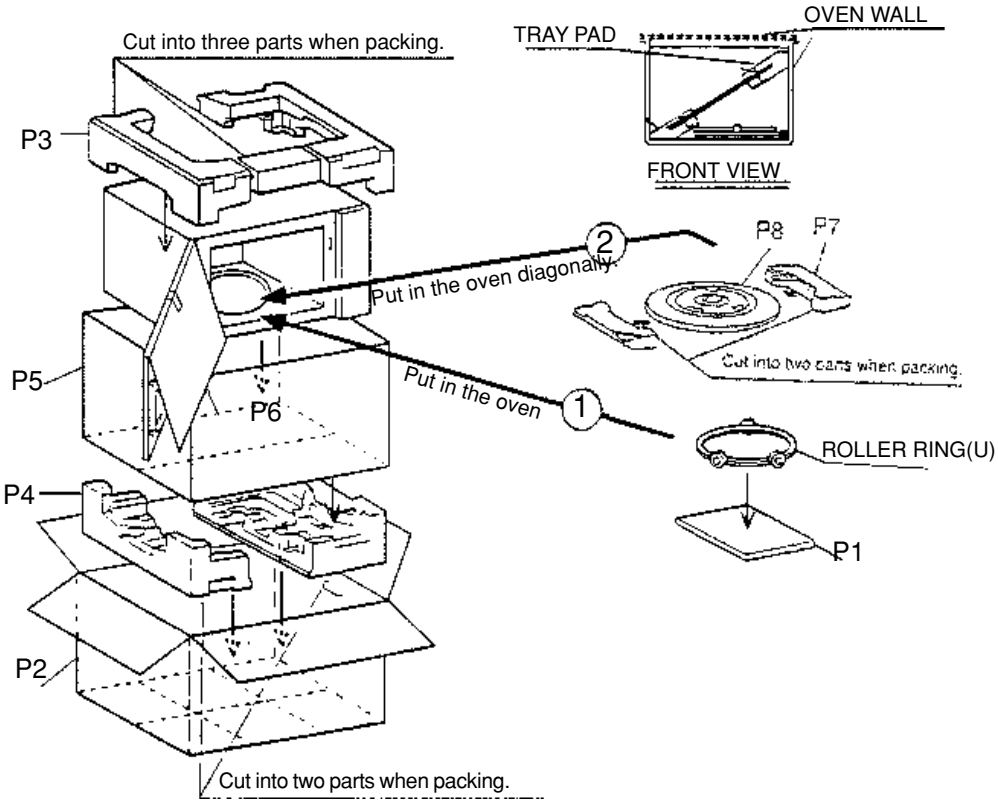
ESCUTHEON BASE ASSEMBLY



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks	
E1		F603L4T00AP	D.P.CIRCUIT	1	S560BFAPH/S560WFAPH	RTL (W/COMPONENT)
E1		F603L4T00CP	D.P.CIRCUIT	1	S560BFCPH/S560WFCPH	RTL (W/COMPONENT)
E1		F603L4T10AP	D.P.CIRCUIT	1	S550BFAPH/S550WFAPH	RTL (W/COMPONENT)
E1		F603L4T20AP	D.P.CIRCUIT	1	S540BFAPH/S540WFAPH	RTL (W/COMPONENT)
E1		F603L4T20CP	D.P.CIRCUIT	1	S540BFCPH/S540WFCPH	RTL (W/COMPONENT)
E1		F603L4T30AP	D.P.CIRCUIT	1	L530BF/WFAPH	RTL (W/COMPONENT)
E1		F603L4T30CP	D.P.CIRCUIT	1	L530WF/L520WFCPH	RTL (W/COMPONENT)
E1		F603L4T50CP	D.P.CIRCUIT	1	S510WFCPH	RTL (W/COMPONENT)
E2		F603Y4T00BAP	MEMBRANE SWITCH (U)	1	S560BFAPH	
E2		F630Y4T00HAP	MEMBRANE SWITCH (U)	1	S560WFAPH	
E2		F630Y4T00BCP	MEMBRANE SWITCH (U)	1	S560BFCPH	
E2		F630Y4T00HCP	MEMBRANE SWITCH (U)	1	S560WFCPH	
E2		F630Y4T10BAP	MEMBRANE SWITCH (U)	1	S550BFAPH	
E2		F630Y4T10HAP	MEMBRANE SWITCH (U)	1	S550WFAPH	
E2		F630Y4T20BAP	MEMBRANE SWITCH (U)	1	S540BFAPH/S540BFCPH	
E2		F630Y4T20HAP	MEMBRANE SWITCH (U)	1	S540WFAPH/S540WFCPH	
E2		F630Y4T30BAP	MEMBRANE SWITCH (U)	1	L530BFAPH	
E2		F630Y4T30HAP	MEMBRANE SWITCH (U)	1	L530WFAPH/L530WFCPH	
E2		F630Y4T40HCP	MEMBRANE SWITCH (U)	1	L520WFCPH	
E2		F630Y4T50HCP	MEMBRANE SWITCH (U)	1	S510WFCPH	
E3		F80344T00BAP	ESCUTCHEON BASE	1	S560BFAPH/S550BFAPH/S540BFAPH/L530BFAPH	
E3		F80344T00HAP	ESCUTCHEON BASE	1	S560WFAPH/S550WFAPH/S540WFAPH/L530WFAPH	
E3		F80344T50BCP	ESCUTCHEON BASE	1	S560WFCPH/S540BFCPH	
E3		F80344T50HCP	ESCUTCHEON BASE	1	S560WFCPH/S540WFCPH/L530WFCPH/L520WFCPH/S510WFCPH	
E4		AEDDRCD4T0AP	DISPLAY	1		
E5		F66174T00AP	DISPLAY TUBE COVER	1		
E6		A67004T00AP	RUBBER CONNECTOR	1		

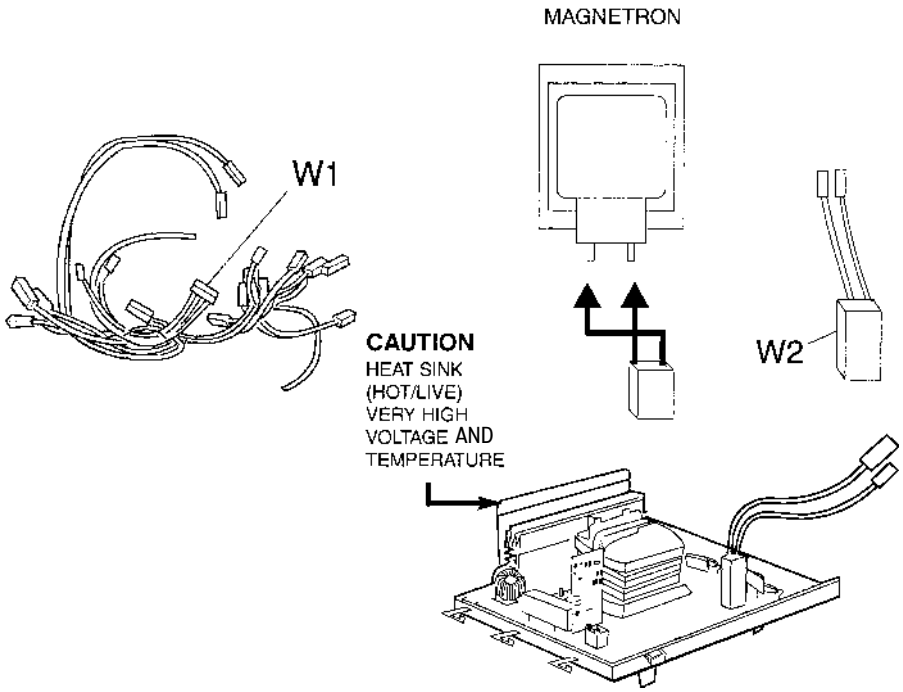
PACKING AND ACCESORIES



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
P1		F00034T00AP	INSTRUCTION MANUAL	1	S560BFAPH/S560WFAPH
P1		F00034T00CP	INSTRUCTION MANUAL	1	S560BFCPH/S560WFCPH
P1		F00034T10AP	INSTRUCTION MANUAL	1	S550BFAPH/S550WFAPH
P1		F00034T20AP	INSTRUCTION MANUAL	1	S540BF/WFAPH,L530BF/WFAPH
P1		F00034T20CP	INSTRUCTION MANUAL	1	S540BFCPH/S540WFCPH
P1		F00034T30CP	INSTRUCTION MANUAL	1	L530WFCPH
P1		F00034T40CP	INSTRUCTION MANUAL	1	L520WFCPH
P1		F00034T50CP	INSTRUCTION MANUAL	1	S510WFCPH
P2		F01024T00BAP	PACKING CASE,PAPER	1	S560BFAPH
P2		F01024T00HAP	PACKING CASE,PAPER	1	S560WFAPH
P2		F01024T00BCP	PACKING CASE,PAPER	1	S560BFCPH
P2		F01024T00HCP	PACKING CASE,PAPER	1	S560WFCPH
P2		F01024T10BAP	PACKING CASE,PAPER	1	S550BFAPH
P2		F01024T10HAP	PACKING CASE,PAPER	1	S550WFAPH
P2		F01024T20BAP	PACKING CASE,PAPER	1	S540BFAPH
P2		F01024T20HAP	PACKING CASE,PAPER	1	S540WFAPH
P2		F01024T20BCP	PACKING CASE,PAPER	1	S540BFCPH
P2		F01024T20HCP	PACKING CASE,PAPER	1	S540WFCPH
P2		F01024T30BAP	PACKING CASE,PAPER	1	L530BFAPH
P2		F01024T30HAP	PACKING CASE,PAPER	1	L530WFAPH
P2		F01024T30HCP	PACKING CASE,PAPER	1	L530WFCPH
P2		F01024T40HCP	PACKING CASE,PAPER	1	L520WFCPH
P2		F01024T50HCP	PACKING CASE,PAPER	1	S510WFCPH
P3		F01044T00AP	UPPER FILLER	1	
P4		F01054T00AP	LOWER FILLER	1	
P5		B01068290AP	P.E.BAG	1	
P6		B01075640AP	DOOR SHEET	1	
P7		F01134T00AP	TRAY STYROL	1	
P8		A06014T00AP	COOKING TRAY	1	

WIRING MATERIAL



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
W1		F030A4T20AP	LEAD WIRE HARNESS	1	******APH
W1		F030A4T00CP	LEAD WIRE HARNESS	1	******CPH
W2		F030E4T00AP	H.V. LEAD WIRE	1	******APH
W2		F030E4T00CP	H.V. LEAD WIRE	1	******CPH

DIGITAL PROGRAMMER CIRCUIT

(NN-S560BFAPH/CPH,S560WFAPH/CPH)

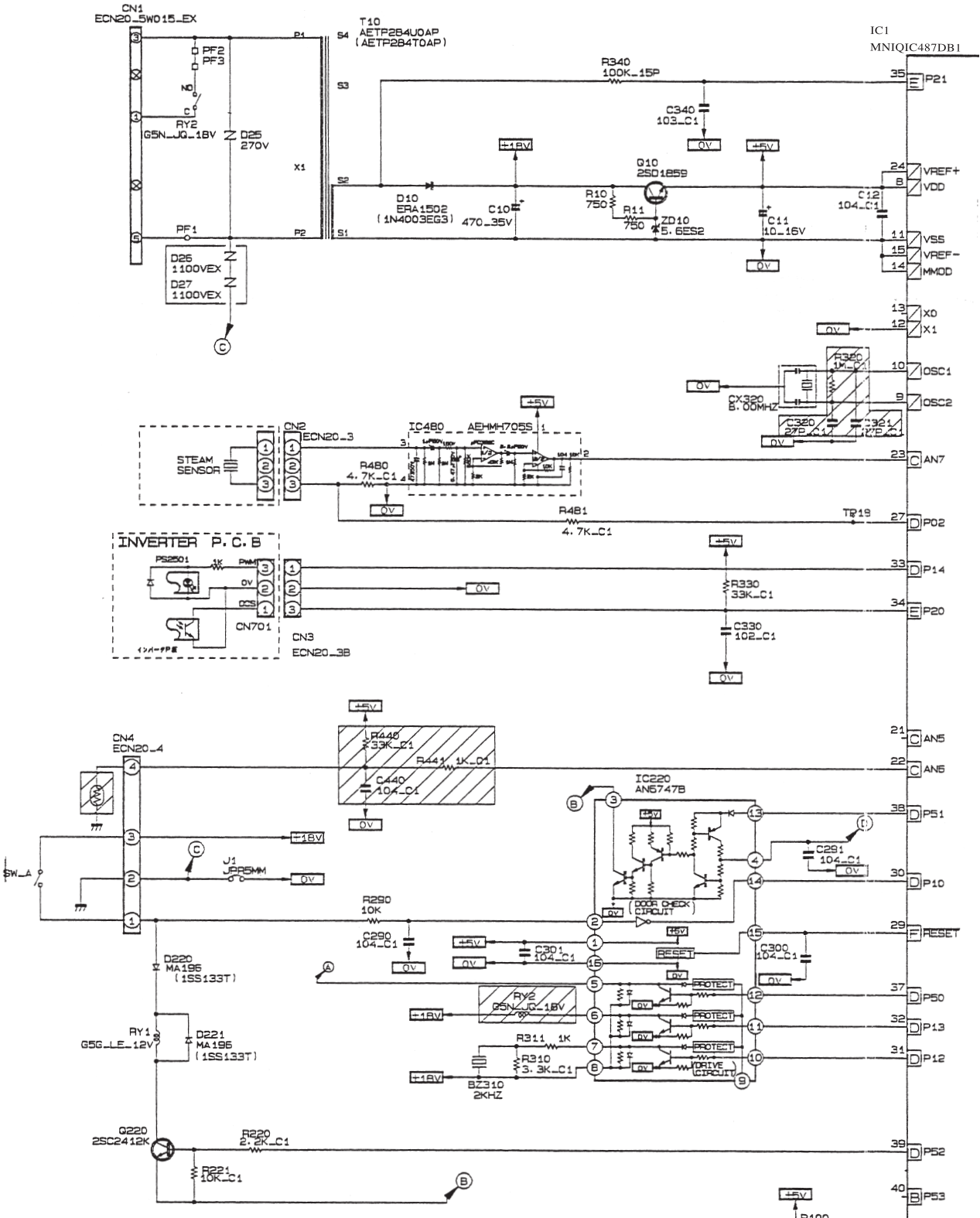
PARTS LIST

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310		AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301		AECUB2F104ZK	CAPACITOR	5	0.1μF/25V
C330		AECUB5C102KK	CAPACITOR	1	0.1μF/50V
C340		AECUB5F103ZK	CAPACITOR	1	0.01μF/50V
C10		ECEA1VM471B	ELECTROLYTIC CAPACITOR A	1	470μF/35V
C11		ECEA1CKA100B	ELECTROLYTIC CAPACITOR A	1	10μF/16V
CN1		AEEMXF01505W	CONNECTOR	1	
CN2		AEEMMF00703W	CONNECTOR	1	
CN3		AEEMXF00703B	CONNECTOR	1	
CN4		AEEMXF00F04W	CONNECTOR	1	
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183		AESQSML210MT	LED	4	
D10		AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221		MA196-(TA5)	DIODE,SI	4	
D25		AERZ271NS10D	VARISTOR	1	
D26,27		AERZB00NS10D	VARISTOR	2	
IC1		MN101C487DB1	L.S.I	1	
IC220		AN6747B	IC	1	
Q181,Q40,Q220		2SC2412KT146	TRANSISTOR	3	
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221		AERJ3GSYJ103	RESISTOR	4	10K,1/16W,50%
R40,R41,R42,R43,44,R45, R46,R47,R48		AERJ3GSYJ104	RESISTOR	9	100K,1/16W,50%
R49		AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220		AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310		AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330		AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
R181		AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
R480,R481		AERJ3GSYJ472	RESISTOR	2	4.7K,1/4W,5%
R311		RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290		RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340		RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11		RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1		AEGG5G1A12	POWER RELAY	1	
IC480		AEHMH705S	SENSOR IC	1	
T10		AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTAJ5R6B	ZENER DIODE	1	

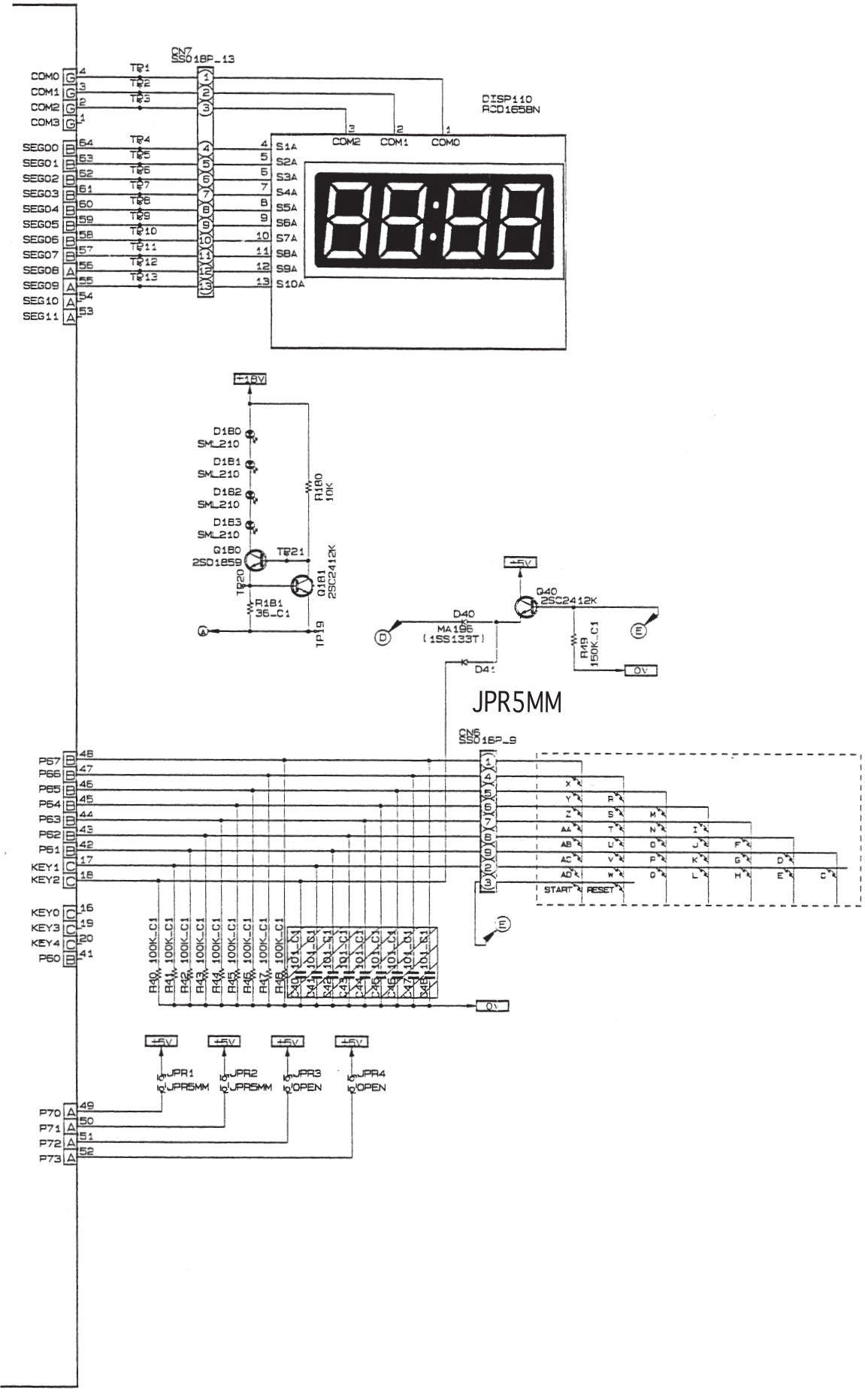
DIGITAL PROGRAMMER CIRCUIT (NN-S530BFAPH/CPH,S540BFAPH/CPH,S540WFAPH/CPH,L530BFAPH/CPH, L530WFAPH/CPH,L520WFAPH/CPH,L510WFAPH/CPH)

PARTS LIST

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310		AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301		AECUB2F104ZK	CAPACITOR	5	0.1MF/25V
C330		AECUB5C102KK	CAPACITOR	1	0.1MF/50V
C340		AECUB5F103ZK	CAPACITOR	1	0.01MF/50V
C10		ECA1VM471B	ELECTROLYTIC CAPACITOR AL	1	470MF/35V
C11		ECEA1CKA100B	ELECTROLYTIC CAPACITOR AL	1	10MF/16V
CN1		AEEMXF01505W	CONNECTOR	1	
CN3			CONNECTOR	1	
CN4		AEEMXF00F04W	CONNECTOR	1	
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183		AESQSML210MT	LED	4	
D10		AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221		MA196-(TA5)	DIODE,SI	4	
D25		AERZ271NS10D	VARISTOR	1	
IC1		MN101C487DB1	L.S.I	1	
IC220		AN6747B	IC	1	
Q181,Q40,Q220		2SC2412KT146	TRANSISTOR	3	
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221		AERJ3GSYJ103	RESISTOR	4	10K,1/16W,5%
R40,R41,R42,R43,R44,R45, R46,R47,R48		AERJ3GSYJ104	RESISTOR	9	100K,1/16W,5%
R49		AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220		AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310		AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330		AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
		AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
		RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290		RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340		RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11		RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1		AEGG5G1A12	POWER RELAY	1	
T10		AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	



P. C. B. No.	JPR1	JPR2	JPR3	JPR4	D26, D27
F603L4T00AP	SHORT	SHORT	OPEN	OPEN	×
F603L4T00CP	SHORT	OPEN	OPEN	OPEN	1100VEX


CN7
SS018P_13
COM0
COM1
COM2
COM3
SEG00
SEG01
SEG02
SEG03
SEG04
SEG05
SEG06
SEG07
SEG08
SEG09
SEG10
SEG11
DISP110
ACD1658N
COM2
COM1
COM0
S1A
S2A
S3A
S4A
S5A
S6A
S7A
S8A
S9A
S10A
+18V
D180
SML_210
D181
SML_210
D182
SML_210
D183
SML_210
R180
10K
Q180
2SD1859
Q181
2SC2412K
R181
36_C1
+5V
Q40
2SC2412K
D40
MA196
(1SS133T)
R49
150K_C1
0V
JPR5MM
CN6
SS016P_9
P67
P66
P65
P64
P63
P62
P61
KEY1
KEY2
KEY0
KEY3
KEY4
P60
START
RESET
R40 100K_C1
R41 100K_C1
R42 100K_C1
R43 100K_C1
R44 100K_C1
R45 100K_C1
R46 100K_C1
R47 100K_C1
R48 100K_C1
C40 101_C1
C41 101_C1
C42 101_C1
C43 101_C1
C44 101_C1
C45 101_C1
C46 101_C1
C47 101_C1
C48 101_C1
JPR1
JPR5MM
JPR2
JPR5MM
JPR3
OPEN
JPR4
OPEN
P70
P71
P72
P73

Model for Latin America & Mexico

MODELS	RPH	
	Mexico	Latin America
NN-S540BF/WF		○
NN-540BF/WF	○	○

* This product is based on NN-S540BF/WF APH model, the different parts are listed as followings:
* Any serviceman who has any quiries or order service parts, please contact own area's service company

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
2		F00074T20BRP	NAME PLATE	1	NN-S540BF
2		F00074T20HRP	NAME PLATE	1	NN-S540WF
2		F00074T70BRP	NAME PLATE	1	NN-540BF
2		F00074T70HRP	NAME PLATE	1	NN-540WF
E1		F603L4T70RP	D.P.CIRCUIT	1	NN-S540BF/WF, NN-540BF/WF
E2		F603Y4T20BAP	MEMBRANE SWITCH(U)	1	NN-S540BF
E2		F603Y4T20HAP	MEMBRANE SWITCH(U)	1	NN-S540WF
E2		F603Y4T70BRP	MEMBRANE SWITCH(U)	1	NN-540BF
E2		F603Y4T70HRP	MEMBRANE SWITCH(U)	1	NN-540WF
P1		F00034T20RP	INSTRUCTION MANUAL	1	NN-S540BF/WF, NN-540BF/WF
P2		F01024T20BAP	PACKING CASE, PAPER	1	NN-S540BF
P2		F01024T20HAP	PACKING CASE, PAPER	1	NN-S540WF
P2		F01024T70BRP	PACKING CASE, PAPER	1	NN-540BF
P2		F01024T70HRP	PACKING CASE, PAPER	1	NN-540WF

5/00
S-4T0
S-4T1
S-4T2
S-4T3
S-4T4
S-4T5
Printed in China